

VOLUME-4, ISSUE-4

DECEMBER 2016

CONSECUTIVE 40TH EDITION

SECTION-II

PAGE NUMBER

(5914-6061)

International Journal of Informative & Futuristic Research

List of Papers Published in IJIFR - Volume 4-Issue 4, December 2016

Sr. No.	Paper ID, Subject Area, Paper Title & Author's Details				Page No.
1	Paper ID	IJIFR/V4 /E4/ 041	Subject	Education	5914-5919
	Title	Resilience Of Teacher: A Tool For Innovative Classroom Management			
	Author's	Dr. M. Vasimalairaja Associate Professor, Directorate of Distance Education, Alagappa University, Karaikudi. J. Gowri Research Scholar, Department of Education Alagappa University College of Education, Karaikudi			
2	Paper ID	IJIFR/V4 /E4/ 043	Subject	Wireless Networks	5920-5929
	Title	Enhanced flexible cache consistency maintenance over wireless Adhoc networks			
	Author's	Neethu S. Assistant Professor, Department Of Telecommunication Engineering, R. V. College of Engineering, Bangalore			
3	Paper ID	IJIFR/V4 /E4/ 039	Subject	Education	5930-5935
	Title	Socio-economic causes of Mental retardation			
	Author's	Dr. Y. Pavan Kumar Principal, KMM College of Education, Tirupati, Chittoor , Andhra Pradesh			
4	Paper ID	IJIFR/V4 /E4/ 048	Subject	Education	5936-5945
	Title	Influences of anxiety and self-Concept on academic achievement of Higher secondary school students			
	Author's	Dr. K. Suresh Guest Teacher Educator, Department of Physical Science, Government College of Education, Orathanad , Thanjavur Dt.-Tamilnadu R.Vendhan Principal, Government College of Education Orathanad , Thanjavur Dt.-Tamilnadu			

International Journal of Informative & Futuristic Research

List of Papers Published in IJIFR - Volume 4-Issue 4, December 2016

5	Paper ID	IJIFR/V4 /E4/ 049	Subject	Physical Education	5946-5949
	Title	Comparison Of Intelligence Level Of School Going Sportsmen And Nonsportsmen Of Tripura – A Pilot Study			
	Author's	Bharti Nigam Research Scholar, Department of Physical Education, Visva-Bharati University, Santiniketan, West Bengal			
6	Paper ID	IJIFR/V4 /E4/ 051	Subject	Management Studies	5950-5954
	Title	Women entrepreneurship and small business- A study with reference to self-help groups			
	Author's	Subha K. Research Scholar, Department Of Management Bharathidasan University, Trichy-TamilNadu Dr. R. Thanga Prashath Assistant Professor, Department of Management Studies, Srimad Andavan Arts & Science College, Trichy-TamilNadu			
7	Paper ID	IJIFR/V4 /E4/ 055	Subject	Management	5955-5961
	Title	Impact of job stress and performance in organisation			
	Author's	D.Vaishnavi Assistant Professor, PG & Research Department of Management , Srimad Andavan Arts & Science College, Trichy-TamilNadu Dr. S. Revathi Associate Professor, PG & Research Department Of Commerce, Periyar EVR College, Trichy-TamilNadu			
8	Paper ID	IJIFR/V4 /E4/ 057	Subject	HRM	5962-5974
	Title	A study on impact of management Traits of self-help group Members on women empowerment in Madurai district			
	Author's	Praba. K Research scholar, Research & Development center, Bharathiar University, Coimbatore-TamilNadu Dr. Kavitha Shanmugam AssociateProfessor, SRM School of Management, Chennai-TamilNadu			

International Journal of Informative & Futuristic Research

List of Papers Published in IJIFR - Volume 4-Issue 4, December 2016

9	Paper ID	IJIFR/V4 /E4/ 065	Subject	Computer Engineering	5975-5981
	Title	Review on providing security to data stored on HDFS using security protocol			
	Author's	Poonam R. Wagh M.Tech. Student Department of Computer Engineering, SITRC, Nashik, Maharashtra Amol D. Potgantwar Professor & HOD Department of Computer Engineering, SITRC, Nashik, Maharashtra			
10	Paper ID	IJIFR/V4 /E4/ 052	Subject	Botany	5982-5994
	Title	A preliminary survey of kharif weeds in Akola region			
	Author's	V.S.Patil , S. P. Rothe , Shital V. Chavan Professor, Department of Botany Shri Shivaji College of Arts, Commerce & Science, Akola , Maharashtra(India)			
11	Paper ID	IJIFR/V4 /E4/ 066	Subject	Computer Engineering	5995-5999
	Title	Review on efficient implementation of BFS for Kepler GPU architectures			
	Author's	Suraj S. Mehetre M.Tech. Student, Department of Computer Engineering SITRC, Nashik, Maharashtra S. M. Walunj Professor, Department of Computer Engineering, SITRC, Nashik, Maharashtra			
12	Paper ID	IJIFR/V4 /E4/ 068	Subject	Business Administration	6000-6005
	Title	Effect Of Competency Assessment On Job Performance Of Bank Employees In India			
	Author's	Keerthy TR Assistant Professor Department Of Business Administration Al Ameen Cllege Aluva, Kerala			
13	Paper ID	IJIFR/V4 /E4/ 069	Subject	Education	6006-6012
	Title	Impact of GST on Indian economy			
	Author's	Pawan Kumar Assistant Professor Department of Commerce, Dayanand College, Hisar (Haryana)			

International Journal of Informative & Futuristic Research

List of Papers Published in IJIFR - Volume 4-Issue 4, December 2016

14	Paper ID	IJIFR/V4 /E4/ 067	Subject	Business Administration	6013-6021
	Title	<i>A study on psychological contract between employees and their employers in it sectors</i>			
	Author's	<i>E. Kuzhalisai Arasi</i> Assistant Professor Department of MBA, St. Joseph's College of Engineering and Technology, Thanjvur-Tamil Nadu			
15	Paper ID	IJIFR/V4 /E4/ 070	Subject	Geo Technical Engineering	6022-6025
	Title	<i>A review on soil stabilization using different industrial wastes and admixtures in recent years</i>			
	Author's	<i>Uma G. Hullur</i> Assistant Professor Department of Civil Engineering KLS Gogte Institute Of Engineering and Technology, Belagavi-Karnataka			
16	Paper ID	IJIFR/V4 /E4/ 071	Subject	Computer Engineering	6026-6031
	Title	<i>Review on sentiment analysis of twitter streaming data for recommendation using apache spark</i>			
	Author's	<i>Rohini Sonawane</i> M.Tech. Student, Department of Computer Engineering, SITRC, Nashik, Maharashtra <i>Amit Palve</i> Professor, Department of Computer Engineering, SITRC, Nashik, Maharashtra			
17	Paper ID	IJIFR/V4 /E4/ 072	Subject	Education	6032-6040
	Title	<i>Effectiveness of cooperative Learning on critical thinking Skills of secondary school Students</i>			
	Author's	<i>Dr.Pargat Singh</i> Assistant Professor, GHG Khalsa College of Education, Gurusar Sadhar (Punjab) <i>Dr. Khushvinder Kumar</i> Principal, M.M. Modi College, Patiala (Punjab)			

International Journal of Informative & Futuristic Research

List of Papers Published in IJIFR - Volume 4-Issue 4, December 2016

18	Paper ID	IJIFR/V4 /E4/ 061	Subject	Education	6041-6045
	Title	A study on achievement motivation of university students in relation to their learning styles			
	Author's	G. Satyanarayana Research Scholar, Department of Education Gulbarga University, Kalaburgi -Karnataka Dr. Hoovinabhavi B. L. Professor Department of Education, Gulbarga University, Kalaburgi-Karnataka			
19	Paper ID	IJIFR/V4 /E4/ 020	Subject	Education	6046-6055
	Title	Experimental investigation of Sliding wear and tensile behavior Of AL27 reinforced with SiCp and Graphite hybrid metal matrix			
	Author's	Sandeep Shejul M.E. Student, Department of Mechanical Engineering Pravara Rural Engineering College, Loni-Maharashtra Dr. Y.R. Kharde Professor, Department of Mechanical Engineering Pravara Rural Engineering College, Loni-Maharashtra			
20	Paper ID	IJIFR/V4 /E4/ 063	Subject	Education	6056-6061
	Title	A multihop routing with energy Preservation for network stability Using genetic algorithm: A review			
	Author's	Gurpreet Singh Grewal M. Tech. Student , Department of Elec. & Comm. Engineering Baba Banda Singh Bahadur Engineering college Fatehgarh Sahib, Punjab (India) Mandeep Kaur Professor Department of Elec. & Comm. Engineering Baba Banda Singh Bahadur Engineering college Fatehgarh Sahib, Punjab (India)			

RESILIENCE OF TEACHER: A TOOL FOR INNOVATIVE CLASSROOM MANAGEMENT

Paper ID

IJIFR/V4/ E4/ 041

Page No.

5914-5919

Subject Area

Education

Key Words

Resilience, Innovation, Classroom Management

1 st	Dr. M. Vasimalairaja	Associate Professor, Directorate of Distance Education, Alagappa University, Karaikudi.
2 nd	J. Gowri	Research Scholar, Department of Education Alagappa University College of Education, Karaikudi

Abstract

Stressful way of life is generally considered as one of the main reasons of physical illness as well as mental disorders. In fact, even if people are exposed to stress in the same way, it is very difficult for some people to adapt stressful life events. Resilience is regarded as a personality trait minimizing the negative effects of stress and preventing disease-causing tension. The protective factors that contribute to better outcomes, processes and mechanisms can be seen as resilience. It is seen understanding technology is becoming more and more important in the workplace and other areas; competing with peers in the 21st century simply necessitates the need for technological finesse. But digital innovations can be a source of problems for schools as well. The main argument for technology in the classroom is that emerging students should be able to apply classroom concepts to daily life, and a large part of daily life revolves around technology. The purpose of this study was research on teacher resilience for classroom innovative practices. In this paper, we will learn the definitions of resilience and importance of resilience, how teachers can develop resilience, teachers facing challenges for innovative classroom management.

I. INTRODUCTION

Students usually do not attribute their success to their teacher until the students are long out of school. Most of the time teachers do not know which students they had a profound effect on. We tend to forget in our day-to-day dealings with students the powerful impact we can

have on their lives. They then studied the children who were able to succeed despite living with much stress and adversity and identified factors that were present in these successful children; these factors form the basis of resilience. Most teachers want to connect with students. Time constraints, curricular demands, accountability, and testing pressures can interfere with the teacher's desire to have positive and personal relationships with students. These solutions are shortsighted and ignore critical factors such as the importance of positive teacher-student relationships and the development of social-emotional competencies and resilience (Benard, B. 1995). The amount of control that teachers have in the classroom is often perceived by the administration as a measure of the quality of an effective teacher. They interpret this classroom management style as evidence that the teacher is in control and must be doing a good job (Edward, 1997). As a teacher who should have effective innovative classroom managing skill with knowledge of resilience.

Resilience:

Etymologically, the word Resilience comes from the Latin 'salire' (to spring, spring up) and 'resilire' (spring back) which refers to the power to recover or spring back from adverse conditions (Davidson et al., 2005). Resilience is also seen as the basic human adaptation system that influences the individual's attitudes towards developments, orders or changes in their life (Masten, 2001). With another perspective, resilience is a dynamic process because of the ongoing interaction between the individual, the event and the environment (Schaap, Galen, Ruijter, & Smeeths, 2008). While resiliency is considered both state-like and trait-like, the developmental nature of it makes it as state-like rather than trait-like (Larson, 2003); because several authors (Egeland, Carlson, & Stroufe, 1993; Larson, 2003; Stroufe & Rutter, 1984) imply that resilience can be improved with some supportive programs to make an individual adaptable for upcoming situation. Firstly, resilience is a psychological construct that involves the study of personal factors like self-esteem, self-efficacy, motivation, resourcefulness and health, which are believed to strengthen the resiliency of individuals in the face of adversity. In this relationship, protective factors which hinder the impact of adverse situation (Kumfer, 1999), personal factors, external support systems such as friends and community resources are incorporated.

Originally, the concept of resilience has taken attention from many disciplines such as psychiatry, developmental and clinical psychology (Masten & Powell, 2003). On the other hand, most of the studies associated with resilience are done with children's vulnerability towards bad environments (Larson, 2003). In the study, how children who come from bad environments can rebound and become productive adults is discussed. They compared successful adults with unsuccessful ones and looked for the differences between children from the same group.

Innovation:

Innovation is defined simply as a "new idea, device, or method". The process of translating an idea or invention into a good or service that creates value or for which customers will pay. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate

application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products.

Classroom Management:

Classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class. When classroom-management strategies are executed effectively, teachers minimize the behaviors that impede learning for both individual students and groups of students, while maximizing the behaviors that facilitate or enhance learning.

II. WHY SHOULD TEACHERS HAVING RESILIENCE?

Can teachers make an impact on these critical risk factors? Ideally, both home and school work to develop protective factors for children. However, the school alone can make a significant impact on these protective factors. In fact, a recent under reported study of 12,118 adolescents by Resnick et al. (1997), titled “Protecting Adolescents from Harm,” found that positive emotional connections to parents and teachers were the strongest protective factor. School connectedness was protective of every health-risk behavior. (e.g., emotional health, suicidal thoughts and behaviors, violence, use of cigarettes and alcohol)

The study also found that having positive relationships with teachers was more important than class size, amount of teacher training, classroom rules, and school policy in protecting adolescents from destructive behaviors. Resnick et al. (1997) state, “Of the constellation of forces that influence adolescent health-risk behavior, the most fundamental are the social contexts in which adolescents are embedded; the family and school contexts are among the most critical” (p. 832). When students feel connected at school, they are less likely to engage in violence, drugs, alcohol, sex, or other harmful behaviors. Positive teacher-student relationships are also cited as a significant contributor to academic achievement and motivation (Elias, 1997) and the prevention of dropout (Thurlow, Christenson, Sinclair, Evelo, & Thornton, 1995), bullying (Olweus, 1999), substance abuse (Resnick et al., 1997), and violence (Dwyer, Osher, & Warger, 1998). In summary, teachers can have a tremendous impact on resilience development in their students. This research is important and should lead us to seriously examine resilience of teacher helps in classroom management.

III. IMPORTANCE OF CLASSROOM MANAGEMENT:

- To optimize the student learning and achievement
- To successfully engage students
- To manage classroom time effectively
- To develop and maintain a positive classroom atmosphere
- For sound behaviour management to avoid classroom indiscipline
- To manage classroom resources effectively
- Student movement and flexibility

- The space in the classroom
- To accommodate every student in the classroom, a trainer uses a wide range of audio visual support devices.

IV. SOME ESSENTIAL ASPECTS OF RESILIENCE OF TEACHER

- ▶ **Emotional aspects:** Able to bounce back-A resilience teacher is one who is able to bounce back from the stress and hard experiences and continue teaching effectively. A resilient teacher can keep their sense of humour and enjoy the job and laugh about the bad stressful events that occur and does her/his best to start each day with a happy attitude. Manages emotions: A resilient teacher has a positive outlook, a friendly, calm disposition, is self confident and reliable. A resilient teacher doesn't take things personally and remains objective in difficult situations.
- ▶ **Motivational aspects:** Resilient teachers work hard to maintain a positive outlook on their work and leave school thinking about the highs rather than the lows. They have realistic expectations of themselves and others. Persist and persevere through problems or situations. They are unrelenting when overcoming challenges within the classroom/school. They do not give up on improving themselves and their practice.
- ▶ **Profession-Related Aspects:** *Organisation, preparation, flexibility, adaptability*-One who is able to adapt to the demands of each student and class, have the tools at their disposal to react appropriately to each situation be able to think on their feet and above all keep their sense of humour and enjoy the job. A teacher who is able to think on their feet if they are faced with a problem or faced with challenges in the classroom. Can think quickly of alternatives and find solutions, is reflective and flexible and takes suggestions on board.
- ▶ **Social aspects:**
 - *Collaboration, asking for help and taking advice-*
 - i.) Someone who is willing to reach out for help to other supportive teachers and admin staff and someone who is willing to take and use constructive criticism.
 - *Professional and personal relationships:*
 - i.) Have solid, honest relationships with colleagues.
 - ii.) One that has someone to talk to about work related issues.
- iii.) Resilient teachers talk with each other. (Caroline Mansfield, 2012)

V. TEACHERS FACING CHALLENGES IN INNOVATIVE CLASSROOM MANAGEMENT

Some teachers still have lack of the ICT skills, some of them lack of the area in the curriculum and the biggest obstacle is language barrier if they want to enrich the educational content of their subject with use of different digital multimedia resources on internet. In a smart classroom, the teacher can use the resource available only on the internet for the better understanding of students. So, teacher should have basic computer based knowledge. If not the students do not understand the topic properly or gets confused or even sometimes.

Key among all challenges is the lack of adequate, ongoing professional development for teachers who are required to integrate new technologies into their classrooms yet who are unprepared or unable to understand new technologies.

Not all schools can keep up with the rapidly changing technology. Upgrading equipment is often costly and schools may not have the manpower to handle the equipment. Most classrooms contain at least twenty students, which can take up a great deal of internet bandwidth in the instance that they all must access their laptop or tablet at once. It may be difficult for a teacher to monitor his/her students so closely in class as to determine whether they are utilizing educational apps on their tablets. Finally, all teachers cannot use smart technology for teaching. The teachers have to be trained before they can start teaching in a smart classroom.

The teachers are trained to use the technology in an effective manner. They are also trained to handle faults in the gadgets. This training teachers are not properly trained the technology would become a disturbing factor rather than becoming helpful.

VI. RESILIENCE TEACHERS MAKES AN EFFECTIVE INNOVATIVE CLASSROOM MANAGEMENT

The resilient teacher makes effective strategies for dealing with a variety of thorny situations that most teachers will face in their careers. The following some strategies will resilience teacher follows in innovative classroom activities.

- Communicate tactfully but forthrightly with administrators, colleagues and students whose actions interfere with their ability to do his/her job properly.
- Confidently and convincingly express his/her thoughts and expectations to all stakeholders.
- Increase his/her influence with coworkers, students and parents.

Finally, a resilience teacher find the solutions need to resolve and to bounceback strong than ever. (Allen N.Mendler, 2014).As a resilient teacher having following qualities and strategies like wise,

- has effective time management and organisational skills.
- Has a positive attitude, even in times of difficulty
- Has the ability to 'bounce back' when experiencing adversity.
- Ensure a balance between work and leisure. (Caroline Mansfield, 2012)

VII. CONCLUSIONS

A person who demonstrates resilience is able to regulate his or her emotions and interact more effectively in social environments. Resilience is nurtured, developed, and mobilized in times of stress. Novice teachers, given the right kinds of social, emotional, and professional support, can work towards developing resilient responses and behaviors, such as finding and maintaining balance in life, seeking and nurturing supportive relationships, persevering to achieve their goals and work through difficult situations, sustaining an optimistic outlook, and rebounding after a setback. Finally, by the following literature review from this study resilience is one of the tools for effective classroom management. Resilience, linked to the

development of teacher efficacy and underpinned by emotional competence, appears to play an important role in new teacher success.

VIII. REFERENCES:

- [1] Bobek, B.L. (2002), *Teacher resiliency: A Key to career longevity*. The Clearing House, 75(4), 202-205.
- [2] Caroline Mansfield, (2012). *Promoting resilience for teachers and their students: A four dimensional view*, The children's Hospital Education research institute conference, Sydney.
- [3] Mehmet Kumartasali, (2014). *The determination of resilience scales' scores of Teachers in the sample of isparta*, *International Online Journal of Primary Education* 2014, volume 3, issue1.
- [4] Melanie Tait, (2008). *Resilience as a Contributor to Novice Teacher Success, Commitment, and Retention*, *Teacher Education Quarterly*, Fall 2008.
- [5] Rebecca Harkema, (2003). *Technology in the Classroom: Advantages & Disadvantages*, www.study.com.
- [6] Reivich, K. & Shatté, A.(2002). *The resilience factor: 7 essential skills for overcoming life's inevitable obstacles*. New York: Broadway Books.
- [7] Terry Heick, (2012). *5 Problems with Technology in Classrooms*, TeachThought Staff.

To Cite This Article

Vasimalairaja, M., Gowri, J. (2016) :: "Resilience Of Teacher: A Tool For Innovative Classroom Management" *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5914-5919, Paper ID: IJIFR/V4/E4/041.

ENHANCED FLEXIBLE CACHE CONSISTENCY MAINTENANCE OVER WIRELESS ADHOC NETWORKS

Paper ID	IJIFR/V4/ E4/ 043	Page No.	5920-5929	Research Area	Wireless Networks
Key Words	Wireless Adhoc Networks , Cache consistency , network communication overhead, Probabilistic Delta Consistency, FCPP Algorithm, MAC Layer				

Neethu S.

**Assistant Professor,
Department Of Telecommunication Engineering,
R. V. College of Engineering, Bangalore**

Abstract

The restricted communication resources (e.g., bandwidth and battery power) and the unscrupulous collaboration among operators make efficient data diffusion and sharing a perplexing task in wireless ad hoc networks. Moreover, all the nodes are not directly linked with the APs (Access Points), and in order to connect to an external network an expensive link (e.g., a satellite link) might be required. To shrink the cost and delay for the data access, a desirable solution is to store recurrently retrieved data at the data basis node (gateway node) and a group of caching nodes. Thus by caching frequently retrieved data items at the basis side is an effective technique to improve performance in wireless networks is obtained. Moreover, bandwidth consumption as well as data access delay is considerably condensed since some data access requirements can be aided from the local cache, thereby precluding the need for data transmission over the scarce wireless links.

I. INTRODUCTION

Data caching is an efficient way to reduce query delay, save bandwidth, and improve overall system performance, particularly in a mobile system. Many applications have to deal with the challenges of efficient access of rapidly changing data objects such as news, stock prices, sensor data, and traffic information. Cache consistency refers to the consistency between the source data owned by the data source node and the cache copies held by the caching nodes. However, the wireless mobile computing environment is characterized by constraints in bandwidth and battery power, as well as user mobility and unreliable wireless links leading to frequent disconnections. Thus, maintaining cache consistency incurs

overhead, which can be high in wireless ad hoc networks. Since different applications often have different requirements on the consistency level, it would be highly desirable to provide users the flexibility in specifying consistency requirements. Thus, users can efficiently trade cache consistency for reduced consistency maintenance cost.

Caching frequently accessed data items at the client side is an effective technique to improve performance in wireless networks. With caching, both bandwidth consumption data access delay are reduced since some data access requests can be served from the local cache, thereby obviating the need for data transmission, over the scarce wireless links. In a group of people who go for trekking frequent access to the internet would be required via smart phones and laptops. In such a case a cost-effective way to access internet would be to stockpile frequently requested data items to be cached in a set of cache nodes in an already deployed wireless adhoc network.

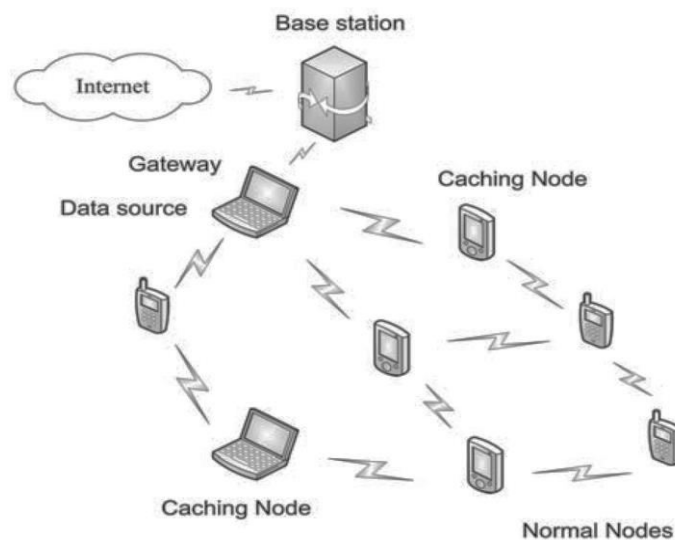


Figure1: System Architecture [1]

Since wireless mobile computing environment has bandwidth and battery constraints as well as user mobility and unreliable wireless links which leads to repeated cessations. Thus for cache consistency maintenance user incur overhead which is high in wireless adhoc networks. Since different applications demands different consistency levels, provisions for flexible consistency should be provided to the users. Thus efficient trade-off between cache consistency and consistency maintenance cost can be achieved. At the same time energy consumed, packet loss, end to end delay, routing overhead, normalised routing load should be less while providing a higher packet delivery ratio.

The consistency requirements of a user eager to know the stock prices, a taxi driver form a multihop vehicular ad hoc network accessing traffic information to avoid Traffic-jam, doctor monitoring a patient's health, weather forecasting etc. have different consistency requirements. In cases like weather forecast stale information up to a certain degree can be tolerated while in other cases that is undesirable. In such cases, as long as certain percentages of cached information are consistent, users can rely on those values. So in order to provide provisions for flexible consistency requirements with nominal maintenance costs

an optimised consistency maintenance algorithm as well as a consistency model has to be proposed [1].

II. LITERATURE SURVEY

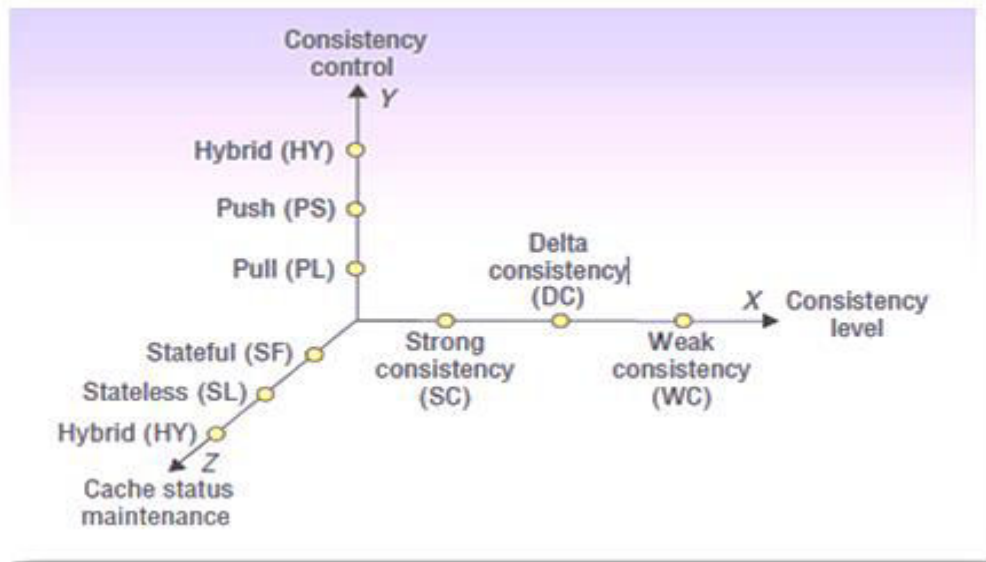


Figure 2: Cache consistency Maintenance Strategies [2]

There can be different levels of consistency namely Strong Consistency (SC), Delta Consistency, Weak Consistency and Probabilistic Consistency. We can define probabilistic consistency in a numerical manner. [4] In a context of visits created by a Base Station during a period of time t , if the number of visits is $A_v(t)$, and the number of reliable data items answered by them is $A_c(t)$. We say the Base Station fulfil a probabilistic consistency of Γ if

$\lim_{t \rightarrow \infty} \left(\frac{A_c(t)}{A_v(t)} \right) \geq \Gamma$. [4] A Strong consistency mechanism guarantees that the request served from the cache node will always is reliable with those on the server node. This implies that a request will be never provided with a stale data. [4] Every data is provided with a version number and time stamp on the cache node while those in the server node will have a version number. As and when a data object is created the version number is set to zero and it increases incrementally with each succeeding update. [4] If a version number of a data item at a cache node is same as the one with the server node; a query served by the cache node with a Strong Consistency(SC).

If any query of a data item on a cache node is never obsolete by more than Δ time with the data at the server node, it fulfils delta consistency (DC). [4] A weak consistency mechanism offers no assurance that the query serviced by a cache node will be reliable with that on the source node. This means that obsolete data can be served from the server.

The data updation can be initiated by source node or a cache node. The former cache updation puts the obligation of consistency maintenance on the server node which is a push (PS) operation where the source node pushes the update message to other cache nodes. In

contrast, the latter approach is a pull (PL) operation that needs each cache node to pull the update messages from the server. [2] The source node may or may not maintain the status of its cache nodes. In the Stateful (SF) approach, the source records the information about the cache nodes as well as the data stored in them. In the Stateless (SL) approach server does not maintain the details of the cache nodes. As a substitute, it records an update history (of a reasonable length) and occasionally floods this statistics as an invalidation message, generating network communication overhead. [2]

Lease protocol offer a strong consistency level and handles host and communication failures. Lease is a contact, gives its owner quantified rights over possessions for a limited period of time. During the term of lease the server cannot update the data without the consent of its holder. Once the approval for write is granted by the cache node it abolishes its local copy of data. Lease period can be for long or short durations.[5]TTR Mechanism provides a temporal consistency using a pull-based method. Here TTR value is calculated for each cached item and denotes when the server node should be communicated so as to revive the new value of cached data. For severe consistency requirements this value is kept small and vice-versa. Based on user requirements, TTR which can be adaptively varies can also be employed. There is another mechanism where the source node assigns each data a time-to-live field which indicates that until this value expires the cache node a node can rely on the value stored in the cache node. Once the TTL value expires the server node has to be contacted in order to check the consistency. Unlike Lease protocol there is no guarantee that the value will not be updated before the TTL expires. In this mechanism the server need not maintain the state of the cache nodes.[7]

In Pull each read/client poll mechanism the cache node communicates the source node for each query it faces. This ensures a strong consistency but if the network between the cache node and source node is broken the read has to be blocked. Moreover this mechanism induces large round trip delay which will contradict the advantage of caching data close to users. In addition, massive network messages have to be flooded in the network to maintain the consistency requirements. [6] In server Invalidation scheme a notification is send to the cache nodes by the server node as and when data is updated. Thus only optimal network messages are floated for maintaining cache consistency. The disadvantage is that server node has to maintain the list of all the cache nodes that have read the object and has to maintain indefinitely. As the number of clients accessing a single data increases the resulting state space becomes huge and ever increasing. Another disadvantage is that for a data which is updated more often more invalidation messages need to be sent which will eventually lead to burst in network traffic. If cache nodes cannot be reached due to any network disconnectivity then source node has to block the data updation or violate consistency warranties. [7]

In Invalidation Report (IR)-based Invalidation scheme the source node sends an invalidation report where the changed data items would be indicated. Thus there is no need of querying the server directly, rather the cache nodes can listen can listen to these IRs over wireless channel and use them to authenticate their local cache. The disadvantages of this scheme are

long query latency and if the clients are in power-off mode for a long time (in-order to save energy) they may miss some IRs. In such cases the cache nodes has to flush out the entire cached data since it is unaware about which portions of the cache are valid. This action can cause bandwidth wastage in future queries.

In Updation Invalidation Report (UIR) approach, a small fraction of the essential information (called updated invalidation report (UIR)) related to cache invalidation is replicated several times within an IR interval and, hence, the client can answer a query without waiting until the next IR. However, if there is a cache miss, the client still needs to wait for the data to be delivered. Thus, both issues (query delay and bandwidth utilization) are related to the cache hit ratio. In this a proactive cache management scheme is used to improve the cache hit ratio and, hence, reduce the query delay and improve the bandwidth utilization. Instead of passively waiting, clients intelligently pre-fetch the data that are most likely used in the future. In order to reduce the query latency, replicating the IRs m times, that is, the IR is repeated every $(1/m)$ th of the IR interval. As a result, a client only needs to wait at most. $(1/m)$ th of the IR interval before answering a query. Hence, latency can be reduced to $(1/m)$ th of the latency in the previous schemes (when query processing time is not considered). Since the IR contains a large amount of update history information, replicating the complete IR m times may consume a large amount of broadcast bandwidth. In order to save the broadcast bandwidth, after one IR, $(m-1)$ updated invalidation reports (UIRs) are inserted within an IR interval.

III. PROPOSED SYSTEM

As per [1] a general consistency model called Probabilistic Delta Consistency (PDC), integrates the flexibility granted by existing consistency models. This will satisfy user-specified consistency requirements under the PDC model. In Probabilistic Delta Consistency model (PDC), [1] users can specify their consistency requirements in two orthogonal dimensions. The dimension along the x-axis specifies the value, which denotes the maximum acceptable deviation(in time, value, etc.) between the source data and the cache copies; the dimension along the y-axis specifies the probability p ; which represents the minimum ratio of queries served by consistent cache copies. To satisfy consistency requirements under the PDC model, we propose the Flexible Combination of Push and Pull (FCPP) algorithm. In FCPP, each cache copy is associated with a time-out value which is calculated based on the consistency requirements and p . Cache copies with valid time-out values can directly serve cache queries. Upon each update, the data source node sends an invalidation (INV) message to each cache copy possessing a valid time-out and requires an acknowledgement (INV_ACK message) of the invalidation. The data source node can update the source data if it has collected the INV_ACK messages for all the INV messages sent. Otherwise, it postpones updating the data until either the time-out values of all un-responding cache copies expire, or the maximum tolerable delay of data update is reached. FCPP is a generic and flexible scheme. By adjusting the time-out value associated with the cache copies, as well as the tolerable delay of updating the source data,

FCPP on a caching node [1]

Upon receiving a query

(1) IF ($l > 0$) serve the query with the cache copy;

(2) ELSE // l has decreased to zero

(2.1) Send a RENEW message to renew the timeout from the data source node and update the cache copy if necessary;

(2.2) after l is renewed serve the query with the updated cache copy;

FCPP on the data source node [1]

When the source data is ready to be updated

(1) Send an INV message to each caching node with positive l ;

(2) IF (receive an INV_ACK message for each INV message OR has waited for D seconds)

(2.1) update the source data;

Upon receiving a RENEW message from a caching node

(3) IF (the source data has been updated)

(3.1) Send data update to the caching node;

(4) IF (no update is pending)

(4.1) Grant timeout with duration l and the data update to the caching node;

The performance of FCPP algorithm can be enhanced further enhanced by providing a double MAC channel which will effectively reduce the overhead, end-to-end delay, Normalized routing load, energy consumed and at the same time provides a good Packet Delivery Ratio. The tables 3.1 and 3.2 shown below give the performance metrics for FCPP implemented MAC Layer and Enhanced FCPP implemented MAC Layer respectively depict the same.

Table 3.1 Performance Metrics for FCPP implemented MAC layer for different no: of nodes

No. of Nodes	Packet Delivery Ratio	End-to-end delay	Normalized routing load	Routing overhead	Energy consumed
40	35.5	0.618	6.879	4884	22.167
60	32.0	0.580	14.34	9180	47.75
80	33.0	0.724	19.01	12552	128.23
100	21.65	0.457	51.33	22224	197.87
120	4.55	3.55	282.198	25680	210.218

Table3.2 Performance Metrics for Enhanced FCPP implemented MAC layer for different no: of nodes

No: of Nodes	Packet Delivery Ratio	End-to-end delay	Normalized routing load	Routing overhead	Energy consumed
40	63.0	0.440	0.74	938	44.95
60	58.99	0.444	1.33	1572	63.069
80	47.65	0.54	2.65	2525	116.169
100	59.25	0.265	3.32	3938	175.72
120	18.25	1.1865	12.43	4538	181.06

From table 3.1 and table 3.2 it is evident that the Enhanced FCPP implemented MAC Layer provides a better performance over FCPP implemented MAC Layer. A comparison in terms of graphs are shown for various metrics like Packet Delivery Ratio, End-to-end delay, Normalized routing load, Routing overhead and Energy consumed in the following figure 3.1, figure 3.2, figure 3.3, figure 3.4, figure 3.5 respectively.

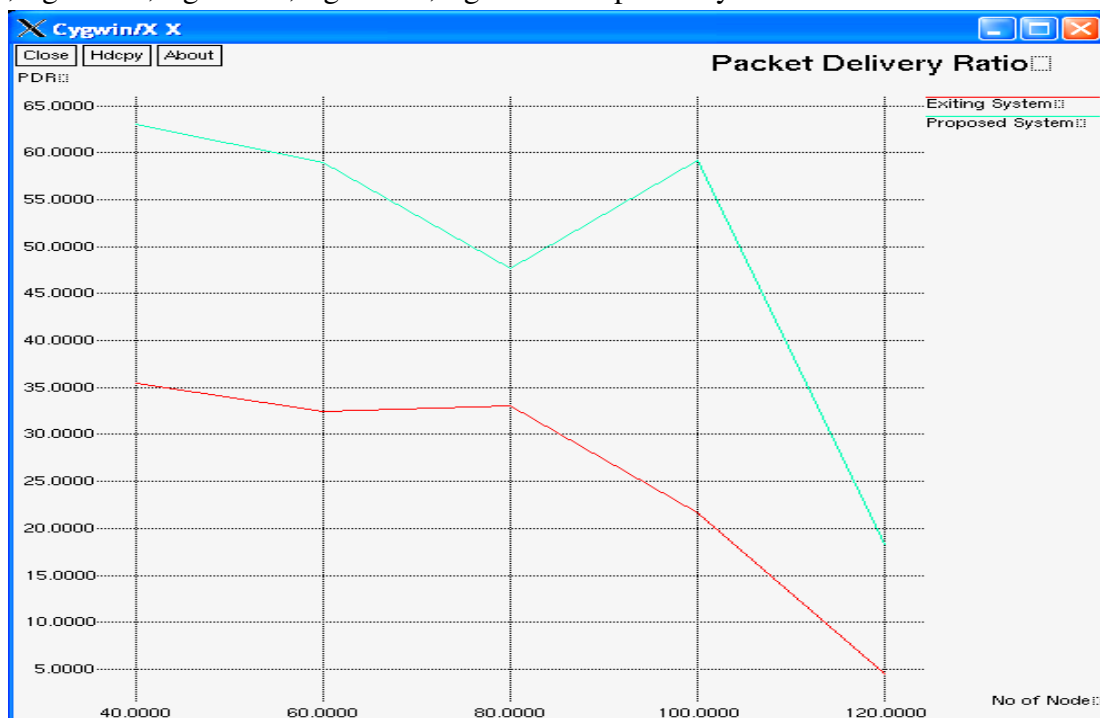


Figure 3.1: Packet Delivery Ratio

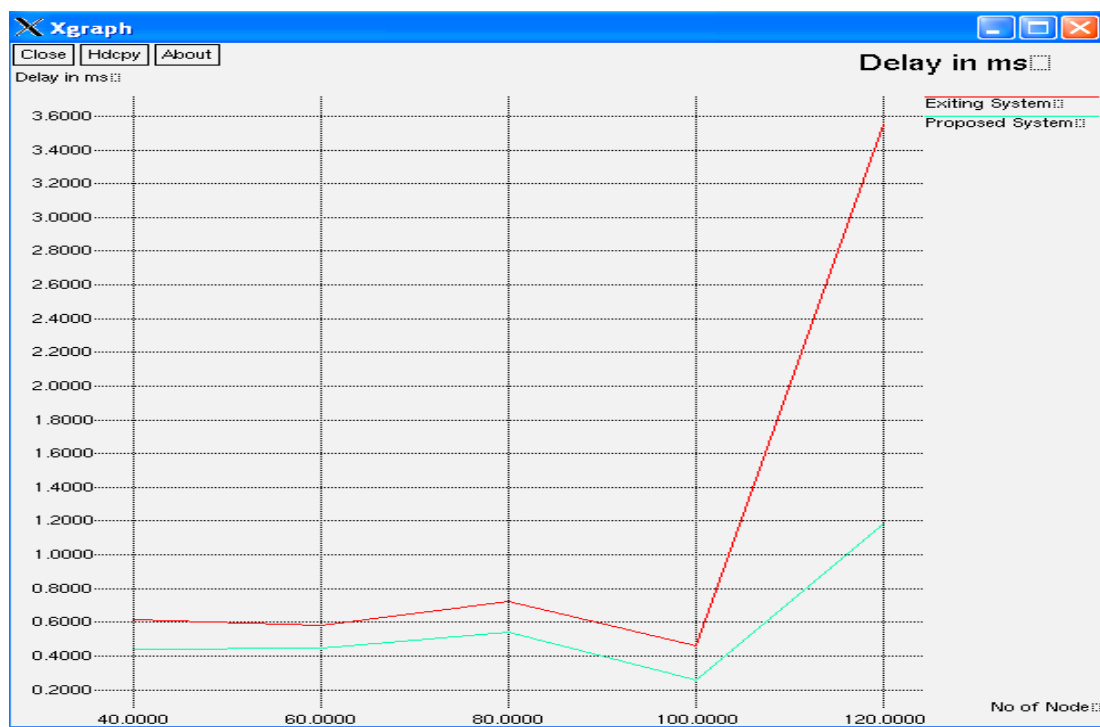


Figure: 3.2 Delay

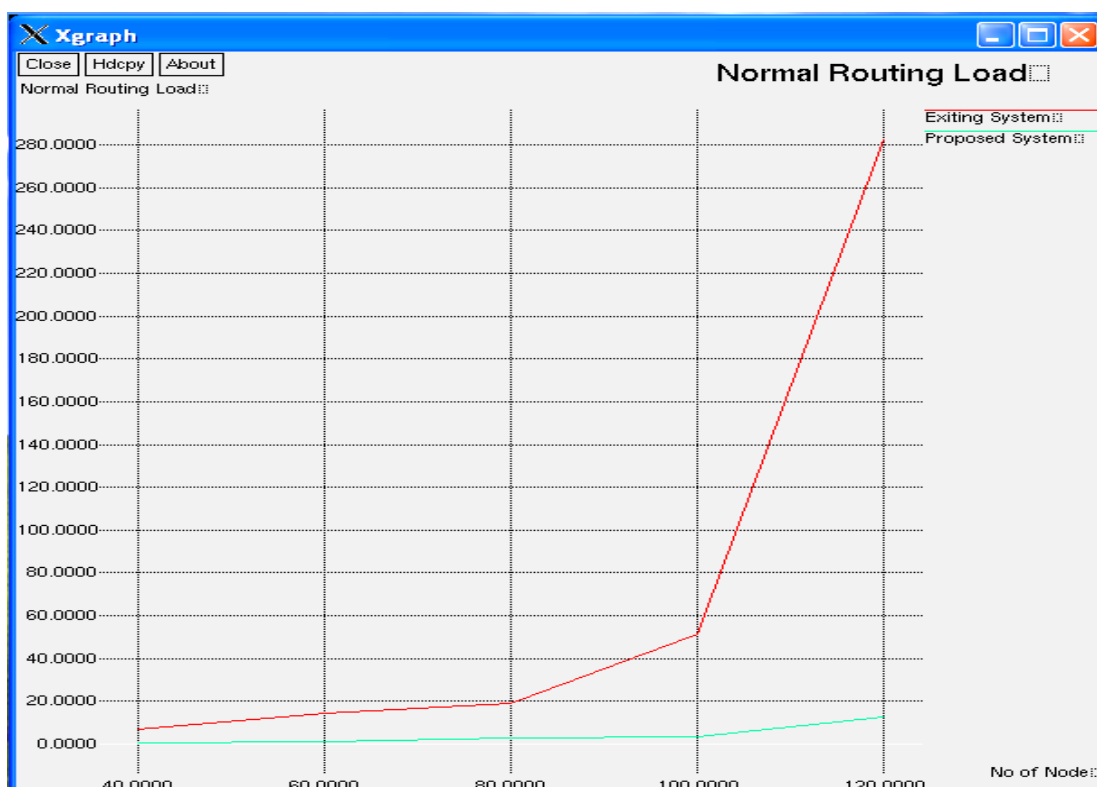


Figure 3.3: Normalized Routing Load

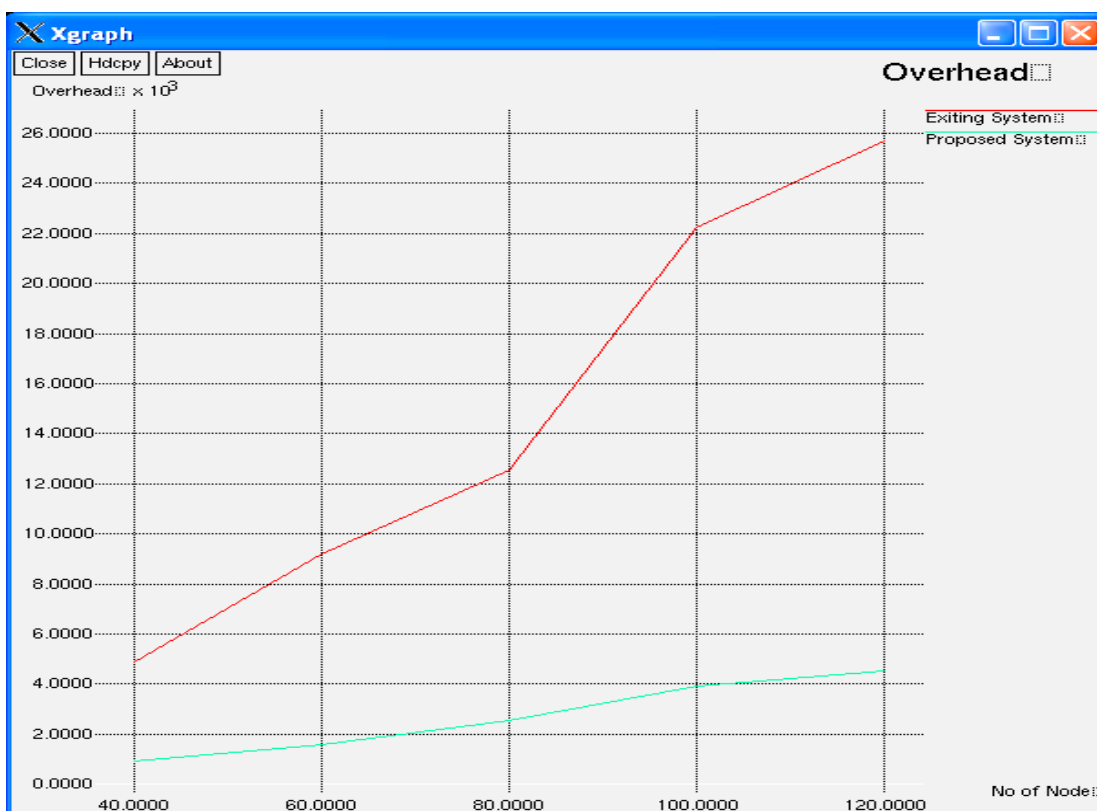


Figure 3.4: Routing Overhead

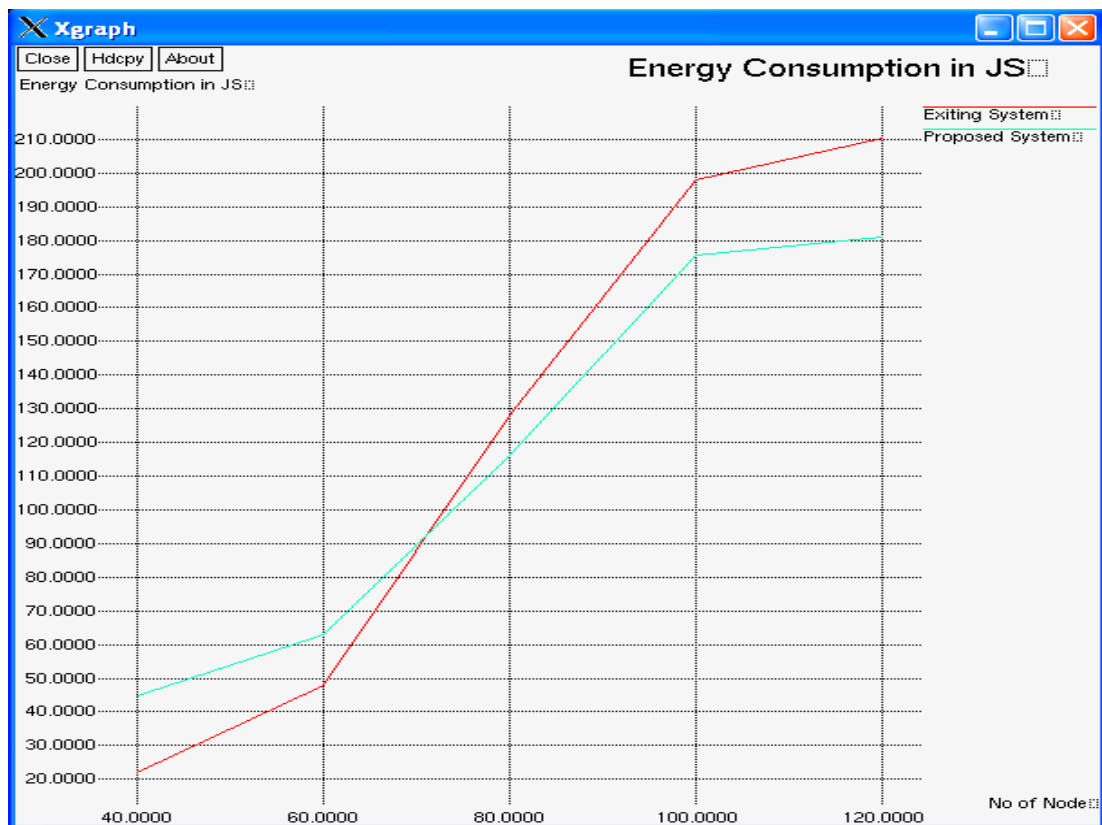


Figure 3.5: Energy Consumed

4. CONCLUSION AND FUTURE SCOPE

This aim of the project was to provide the user the flexibility for various consistency requirements based on the respective applications. The scope of the project expanded into including a provision that would not only provide a better consistency of data but also gives better performance in terms of Packet Delivery Ratio, End-to-end delay, Normalized routing load, Routing overhead, Energy consumed. It is seen that by providing a double MAC channel, the performance is enhanced. The Enhanced FCPP can be much useful in the case of hot data items.

5. REFERENCES

- [1] Yu Huang, Beihong Jin, Xianping Tao, Jian Lu, and YulinFeng "Flexible cache consistency maintenance over wireless adhoc networks", IEEE Transactions on Parallel and Distributed Systems, vol. 21, No. 8, August 2010.
- [2] Cao, Y. Zhang, L. Xie, and G. Cao, "Data Consistency for Cooperative Caching in Mobile Environments," Computer, vol. 40, no.4, pp. 60-67, Apr. 2007.
- [3] Wenzhong Li1, Edward Chan, Daoxu Chen and Sanglu Lu "Maintaining Probabilistic Consistency for Frequently Offline Devices in Mobile AdHoc Networks State Key Laboratory for Novel Software Technology", Nanjing University Department of Computer Science, City University of Hong Kong, Kowloon, Hong Kong
- [4] J. Cao, Y. Zhang, L. Xie, and G. Cao, "Consistency of Cooperative Caching in Mobile Peer-to-Peer Systems over MANET," Int'l J.Parallel, Emergent, and Distributed Systems, vol. 21, no. 3, pp. 151-168, June 2006.

- [5] Cary G. Gray and David R, "Leases: An Efficient Fault-Tolerant Mechanism for Distributed File Cache Consistency" by Cary G. Gray. Cheriton Computer Science Department Stanford University.
- [6] V. Duvvuri, P. Shenoy, and R. Tewari. Adaptive Leases: A Strong Consistency Mechanism for the World Wide Web. In Proceedings of the IEEE Infocom'00, Tel Aviv,
- [7] Pei Cao and Chengjie Liu , "Maintaining Strong Cache Consistency in the World Wide Web," IEEE Trans. Computers, vol. 47, no. 4, pp. 445-457, Apr. 1998
- [8] G. Cao, "Proactive Power-Aware Cache Management for Mobile Computing Systems," IEEE Trans. Computers, vol. 51, no. 6, pp. 608-621, June 2002.

To Cite This Article

Neethu, S. (2016) :: "Enhanced Flexible Cache Consistency Maintenance Over Wireless Adhoc Networks" *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 5920-5929, Paper ID: IJIFR/V4/E4/043.

SOCIO-ECONOMIC CAUSES OF MENTAL RETARDATION

Paper ID

IJIFR/V4/ E4/ 039

Page No.

5930-5935

Research Area

Education

Key Words

Mental retardation, Disability, Handicap, Impairment, Cerebral palsy

Dr. Y. Pavan Kumar

Principal,
KMM College of Education, Tirupati,
Chittoor , Andhra Pradesh

Abstract

Healthy children create healthy nation. When a child has some developmental disorder, it affects not only family but also society. India has a huge number of disabled persons. It has been estimated that ten percent of world's population about 500 million people are either physically or mentally handicapped all over the world. The developing and under developed countries have the preponderance of world's handicapped population and 350 million handicapped are out of reach and out of help. The rate of disability is snowballing into especially in mentally retarded. In about one third of all cases, the cause of mental retardation is not known. Therefore, it is a felt need to prevent the future generation from disabilities particularly mental retardation. The causes for it must be identified, so that the problem of mental handicap would be rectified. This paper depicts that who are vulnerable to mental retardation and what are the causes for the birth of children with mental retardation.

I. OPERATIONAL DEFINITIONS OF KEY WORDS

Impairment means abnormalities of body structure and appearance and organ or system function resulting from any cause in principle. Impairment represents disturbances at the organ level WHO (1976).

Disability reflects the consequence of impairment in terms of functional performance and activity by the individual WHO (1976).

Handicap on the other hand refers to disadvantages experienced by the individual as a result of impairments and disabilities; handicaps thus reflect interaction with an adaptation to the individual's surroundings WHO (1976).

II. INTRODUCTION

'Disability' is a condition or function judge to be significantly impaired relative to the usual standard of an individual or group. The term is used to refer to individual functioning, including physical impairment, sensory impairment, cognitive impairment, intellectual impairment, mental illness and various types of chronic disease. Mental handicap is a condition characterized by subnormal intellectual ability and arrested or delayed development. The term 'mental retardation', 'mental deficiency', 'mental handicapped' and 'mental sub-normality' refers to the same condition. Persons with less than average mental ability or intelligence are called 'mentally retarded'. It is a development disability that is marked by lower than normal intelligence for daily living skills. Normally it presents at birth or develops early in life.

A child with mental handicap finds it difficult to learn, to use past experience for solution of current problems, to remember, understand and adjust to various situations. Mental handicap may or may not be accompanied by concurrent physical disability epilepsy or speech defects. Mental handicap is not curable by use of medicines. If the causative factor is iodine deficiency, metabolic disorder or blood group incompatibility, prompt action may help, but facilities for timely detection and intervention are either inadequate or non-existent even in the metropolitan cities.

There are several causes which result in mental handicap. Hereditary factors can't be ruled out in some causes. Cerebral palsy that is paralyzed brain function may result in mental handicap. Some persons with cerebral palsy are intellectually normal, but have problems only with coordination of their body movements. Other causes include lack of iodine in the diet of the mother, the brain infections before and after birth, inadequate antenatal care, birth injuries, low birth weight, and inadequate nutrition in the first two years of life, injuries untreated in childhood and poisoning from lead, and pesticides. Mental retardation can occur in any family and cuts across the lines of racial, ethnic, educational, social and economic backgrounds. A child with mental retardation is born every 5 minutes in the United States. Based on the 2001 census, the estimated 6.2 to 7.5 million people have mental retardation in India – that is about 3 percent of our total population.

III. OBJECTIVES OF THE STUDY

The present socio-economical study on mental retardation in a school for the mentally retarded was carried out with the following objectives.

- To understand the socio economic back grounds of the mentally retarded children.
- To bring out the factors responsible for the mental retardation.
- To know the pattern of mental retardation among the children.
- To elicit parental attitude towards mental retardation
- To assess the status of the caregivers for mentally retarded children.

IV. RESEARCH METHODOLOGY

Design: The present study selected the mentally retarded children of a school located at Tirupati in chittoor district of Andhra Pradesh. Out of 120 mentally retarded children one-third found in the school (40) were randomly selected and their parents were interviewed. In order to support the present study all the 15 caregivers working in the school were also included. Hence, both parents and caregivers of mentally retarded children constituted the universe (55) of the present study. Since the study is about mental retardation, a structured interview schedule was prepared for the mentally retarded children's parents and schedule consisted of questions regarding socioeconomic back ground of mentally retarded children, parental lifestyle, the circumstances that led to the birth of child with mental retardation, and parental perception towards the school for the mental retarded. Apart from that another schedule was prepared to obtain information from caregivers regarding their socioeconomic status, employment pattern, wages provided to them and their work experience as caregivers for mentally-retarded children in the school. To avoid interruptions and both for convenience and to collect systematic and unambiguous data from them, they were met alone. Since the sample size was too small, no necessity arose to form hypotheses and test them. To arrive at general conclusions, the collected data were analysed and interpreted by applying descriptive methods like percentage, proportion and average and presented in summary form.

V. SUMMARY OF THE STUDY

5.1: Who are vulnerable to mental Retardation?

It is found that mental retardation is found more among males than females. The sex-wise distribution of mentally- retarded children accommodated in the school reveals that of the total(119), two thirds (66.4%) of them were males where as females proportion in the total is 33.6 percent. In the sample of the present study, of the total (40) children included in the present study, males constituted 67.5 percent. Most (85%) of the children were in the age group of 5-5 and their Mean age is 9.6. It is observed that mental retardation is mostly prevalent among Hindus (95%); of them more than three-fourths (77.5%) belonged to Backward Castes while the rest were Scheduled Castes (22.5%). It evidences that the prevalence of mental retardation was found more among Backward Castes in the study area. The educational status of mentally- retarded children's parents reveals that a large majority of their parents were literates (65%) followed by illiterates (30%) and altogether constituted 95% in the total. It proves that birth of children with mental retardation is more among educationally poor in the society. As far as parental occupation of such children was concerned, three- fourths (75%) of them were daily wage followed by farmers (10%), weavers (12.5%), and teachers (2.5%). The study revealed that poor income group was more vulnerable to birth of child with mental retardation.

The classification of the parental monthly income showed that of the total, 55 percent of them earned Rs.1,000-2,000 per month whereas another 22.5 percent earned Rs.2,000-3,000 while the remaining 22.5 percent belonged to various income categories. Rs.1,975 was the average monthly income to the mentally –retarded children's parents. The study brought out

the fact that the occurrence of mental retardation is more in small families and the mentally retarded children's household included an average of four members. More than half (52.5%) of the mentally- retarded children were first born followed by second (32.5%), third (12.5%) and fourth (2.5%) birth –ordered and the Mean birth order them was one (1). Hence, it is obvious that the first-born child is more prone to born with mental retardation.

5.2: Causes for Mental Retardation

While probing the causes for mental retardation it is proved through the present study that early marriage of women resulted in child with mental retardation. It was found that while mother's Mean age at the time of marriage was 20.5 years, 25.5 years was father's age. Half of the total parents (50%) gave birth within two years of their marriage while it was after three years for another 30% of the parents. It was found that the mentally –retarded children in the study area were born after an average of two years of their parental marriage and the mother's Mean age at birth of child with mental retardation was 22.3. A large majority (82.5%) of the mentally-retarded children were born at hospital of which 80% were normal. It was seen that early birth and low birth weight caused mental retardation in children. Their average weight at birth was 2.4 kg and the Mean foetus period was 9 months. More than three-fourth (77.5%) of the parents noticed their child's disability while they were at an average age of 2.2 years. It is to be mentioned that the children accommodated in the school for mentally retarded were found with several deficiencies along with mental retardation. The pattern revealed mental retardation alone 27.5%); mental retardation with hearing retardation (20%); mental retardation with speech impairment (25%); and mental retardation with both speech and hearing impairment (25%); and mental retardation with stunting (2.5%).

VI. DATA ANALYSIS & INTERPRETATION

6.1 PATTERN OF MENTAL RETARDATION FOUND AMONG CHILDREN

It is important to note that a large majority (80%) of the mentally-retarded children was not affected by any disease after birth; three-fourths (72.5%) of their ancestors were not affected by any disability and almost all (95%) their family members were also free from mental retardation, according to the parents. While probing the parental health status during pregnancy a large majority (82.5%) of the children's parents was not affected by any disease. It indicated that even though the parents were free in term of disease or disability they gave birth to mentally- retarded children which proves that the disability-mental retardation- is determined during pregnancy. It is also to be mentioned that (85%) of the total mentally- retarded children's parents were not relatives prior to their marriage.

Table-1: Mean for some selected variables for Mentally Retarded Children

Variable	Mean (N=40)
Age	9.6
Parental monthly income (in Rs.)	1,975/-
Household size	4
Mother's age during marriage	20.5
Fathers' age during marriage	25.5

Mother's age during child birth	22.3
Born of first child after marriage (in years)	2
Children's birth order	1
Mother's pregnancy period (in months)	9
Children' weight at birth (in kg)	2.4
Children's age while the disability noticed	2.2

6.2 PARENTAL PERCEPTION

Parental perception regarding their neighbors' approach towards their mentally- retarded child revealed that of the total, half (50%) of the parents opined that their neighbors were indifferent in their approach towards their child whereas another (32.5%) perceived moderately. However, 17.5% expressed their dissatisfaction with their neighbors' approach towards their child. Nearly three-fifth (57.5%) of the parents opined that their relatives' approach was indifferent while it was moderately perceived by 30 percent. However, 12.5 percent of the total was not satisfied regarding this. While eliciting the parental perception towards the efforts taken by the school for the rehabilitation of their mentally-retarded children only 30% in the total responded positively. However, the remaining 70 percent of the parents opined 'not bad'. Majority (85%) of the parents accompanied their mentally-retarded children to public places with them. The reason for the accommodation of their child in the school for mentally retarded is both for safety and to teach daily activities (80%), to improve behavioral traits (10%), and for safety alone (10%).

6.3 STATUS OF CAREGIVERS FOR MENTALLY RETARDED CHILDREN

All the caregivers found in the school were females. Their Mean age was 29.6. About three-fourth (73.4%) of the caregivers belonged to Christianity while Hindus constituted the remaining proportion (26.6%) in the sample of them three-fifth (60%) belonged to Backward Castes while the rest 40 percent were from Scheduled Castes. More than half (53.3%) of the caregivers completed formal education and they underwent special training programme for mentally retarded whereas another (33.4%) completed the first degree. Two – third (66.7%) of the total caregivers was working in the school for the past four years while the rest one –third (33.3%) was working for more than four years. It was found that they were working in the school as caregivers for an average of 3.3 years. More than half of the caregivers were Teachers (53.3%) followed by Wardens (33.3%), and Cooks (13.4%). It was found that all the teachers in the school were paid of Rs.3,500-4,500 per month, while Rs.1,500-2,500 was paid warden; cooks were paid Rs.2,500-3,500. It was found that the caregivers for the mentally –retarded children in the school earned an average of Rs.3,200 per month. About half (46.6%) of the total caregivers hailed from 2-4 members families while the rest (53.4%) hailed from other categories. The Mean for the caregivers' household was 3. More than half (53.4%) of the caregivers commuted to the school from their home, while 46.6 percent resided at school. None from caregivers family worked as caregiver; 94 percent of the caregivers family members were not affected by any disability.

TABLE-2: MEAN FOR SOME SELECTED VARIABLES (CAREGIVERS)

Variable	Mean (N=15)
Age	29.6
Monthly Income (In Rs.)	3200/-
Work Experience As Caregivers (In Years)	3.3
Household Size	3

VII. CONCLUSION

Educationally weaker and economically poor people's children were vulnerable to mental retardation. Mostly mental retardation was prevalent in small families and the first- born child was prone to mental retardation. Early marriage and early pregnancy, early birth and low birth weight caused mental retardation in the child. As far as the status of the caregivers for the mentally –retarded children was concerned all were in their adulthood and most of them belonged to Christianity; a significant proportion of them underwent training for the rehabilitation of mentally- retarded and worked for a meager salaries.

VIII. REFERENCES

- [1] American Association on Mental Retardation, AD HOC Committee on terminology and classification. (1992) Mental Retardation (9th Ed.) Washington DC, Author.
- [2] Friend M., and Bursyck W.D (2002). Including students with special needs (3rd Ed.) Boston: Allyn & Bacon.
- [3] Terman D.L., Learner M.B., Stevenson C.S., & Behrman R.E. (1996). Special Education for students with disabilities.
- [4] Umadevi, M.R., Special Education (2010), Neelkamal Publications Pvt. Ltd, Hyderabad.

To Cite This Article

Kumar, P. Y. (2016) :: "Socio-Economic Causes Of Mental Retardation" *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5930-5935, Paper ID: IJIFR/V4/E4/039.

INFLUENCES OF ANXIETY AND SELF CONCEPT ON ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY SCHOOL STUDENTS

Paper ID IJIFR/V4/ E4/ 048 **Page No.** 5936-5945 **Research Area** Education

Key Words Anxiety, Study Habits, Kanyakumari, Normative, Moderator Variable

1 st	Dr. K. Suresh	Guest Teacher Educator, Department of Physical Science, Government College of Education, Orathanad , Thanjavur Dt.-Tamilnadu
2 nd	R.Vendhan	Principal, Government College of Education Orathanad , Thanjavur Dt.-Tamilnadu

Abstract

The Normative survey research has been conducted to find the influences of Anxiety and Self-Concept on Academic Achievement of High Secondary School students of Kanyakumari District, Tamilnadu, India. 312 high school students have been selected by using simple random sampling technique of Kanyakumari District in which 12 were rejected owing insufficient data. In this study, the investigators have used independent variables are Anxiety and Self-Concept; and the dependent variable is Academic Achievement. Gender, Locality, Parent Educational Qualification, Management Type and Subject Studying are the demographic variables. Descriptive, Inferential and Regression analyses were used to testing the hypotheses. The study mainly reveals that the Anxiety and Self- concept of the higher secondary school students influences their academic achievement in negative and positive direction respectively. In addition to that the study results indicate that the Anxiety level and Study Habit level is in High; and the Academic Achievement of the higher secondary school students is in first class. Notwithstanding this, Anxiety level is not significant with Gender and Locality; Significant with other moderator variables; the Self Concept is not significant with Subject Studying and not significant with other moderator variables; and the Academic Achievement is significant with Locality and Management type and not significant with other moderator variables.

I. INTRODUCTION

Education is a fundamental right of every individual and it helps to develop the capability of the individuals. Nowadays, the academic achievement of an individual is considered as a primary concern of knowledge by the society but it is not a blossom of knowledge. Most of the parents are wish that our children should get more marks in all subjects and they felt that it shows knowledge of their children. Everyone known that knowledge is a broad term than academic achievement. Academic achievement is only focuses the performance of the individual in their examinations regards to their subject beyond. Generally, the academic achievement is affected by students' psychological, physiological and sociological factors. In such factors, the anxiety and self-concept are psychological factors affecting academic achievement. Before entering the room the students exam anxiety is varied depends upon the individual. Sometimes the high anxiety of an individual may suffer in loss of concepts and it turns less achievement and self-concept also fostering the academic achievement. In this context, the investigator of this paper has conducted a research on Anxiety, self-concept and Academic achievement.

II. RATIONAL FOR THE STUDY

Most of the educational institutions and the parents of the students are mainly focuses the academic achievement. It is an indicator of performance of a student but it is not a blossom of students' knowledge. Knowledge is a broad thing which is not limited under the percentage or marks. Academic Achievement is called as the performance of the individual in which what they have been learned and it may be affected or fostered by the psycho-socio factors in which Anxiety and Self-concept is one of them.

- **Anxiety:** Anxiety is disorders of an individuals' personality. It produces mental health problems of childhood and adolescence. As many as 1 in 10 young people may suffer from an anxiety disorder. About 50 percent of children and adolescents with anxiety disorders also have a second anxiety disorder or other mental or behavioral disorder such as depression. The person having anxiety will lead the person loss their memorized concepts before entering the examination hall and it produces the less performance in examination. For that the investigators have used the anxiety as a first independent variable.
- **Self-Concept:** Self-Concept is a collection of beliefs about oneself. It also includes the academic performance, gender roles, sexuality and racial identity. Self-Concept may use to foster the academic achievement in different ways but it different from individual to individual. The individual self- concept may give an idea about the question and answering while attending examination. For that Self-concept also consider as the second independent variable.
- **Academic Achievement:** Academic Achievement is an academic indicator of the students. Most of the educational institutions are ranked with its students' academic achievement as well as the students' performance. The individual knowledge or effectiveness of the variable are found by using the academic achievement.

Academic Achievement is an indicator as well as essential factor in education which is used to find the effectiveness of teaching, learning and so on. With this importance, the investigators have used the academic achievement as dependent variable.

III. HYPOTHESIS OF THE STUDY

Hypothesis is a tentative assumption or scientific guess of the research and it will be tested during the research with some useful statistics. The following are the hypotheses of the study.

- ✓ The level of Anxiety of higher secondary school students is moderate.
- ✓ The level of Self-Concept of the higher secondary school students is moderate.
- ✓ The Academic Achievement of higher secondary school students is in first class.
- ✓ There exists no significance difference in Anxiety level of higher secondary school students with respect to the demographic variables such as,
 - Gender,
 - Locality ,
 - Parental Education,
 - Management Type, and
 - Subject Studying.
- ✓ There exists no significance difference in Self Concept of higher secondary school students with respect to the demographic variables such as,
 - Gender,
 - Locality ,
 - Parental Education,
 - Management Type, and
 - Subject Studying.
- ✓ There exists no significance difference in Academic Achievement of higher secondary school students with respect to the demographic variables such as,
 - Gender,
 - Locality ,
 - Parental Education,
 - Management Type, and
 - Subject Studying.
- ✓ There exist no influences of Anxiety and Self Concept on Academic Achievement of Higher Secondary school students.

IV. RESEARCH DESIGN OF THE STUDY

Research design is common to all type of research but it varies research to research. Generally, research design includes Variables, Method, Sample and Sampling technique, tools and statistics. In this continuation those explained in the below paragraphs.

4.1 Variables: Ones it varies its values or traits or characteristics is called as variable. Here the investigators have used the following variables.

4.1.1 Independent Variable

A trait or a characteristic or a value does not having changes on other things during the research is called as Independent variable. The independent variable of the research are as follows.

- ✓ Anxiety, and
- ✓ Self-Concept.

4.1.2 Dependent Variable

A trait or a characteristic or a value always changed with other variable during the research is called as dependent variable. The dependent variable of the research is as follows.

- ✓ Academic Achievement

4.1.3 Moderator Variable

It is a special type of independent variable. A trait or a characteristic or a value always changed with some other variables but not by the independent variables during the research is called as moderator variable. The moderator variables of the research are,

- ✓ Gender,
- ✓ Locality ,
- ✓ Parental Education,
- ✓ Management Type, and
- ✓ Subject Studying.

4.2 Method

Survey method is most useful to collect data from the large sample of the populations. Here the investigators, has adopted Normative Survey method to collect data from the large sample.

4.3 Sample and Sampling Technique

The investigator has selected 312 higher secondary students form Kanyakumari Educational districts by using simple random sampling technique. With 312 samples 12 were rejected by owing of incomplete questionnaires.

4.4 Tools

Tools are very essential to the research because it occupies a prominent place of measure the variables. In this research, the investigators have used the following tools.

4.4.1 Anxiety Scale

The Anxiety Scale has been constructed and standardized by SURESH (2015) with 60 statements (5 point rating scale) and they are subjected to item analysis with t-test. 52 items were retained with the critical value of 1.75 and its greater (Edward, 1957). The face and content validity were found by the subject experts' opinion including two associate professor and one school teacher from Tamilnadu. The reliability of the scale is found to be 0.79 by using split-half method and the intrinsic validity of the tool is 0.89.

4.4.2 Self Concept Scale

The self concept scale was constructed and standardized by the investigators with 45 items and it is in five point rating scale. The scale has been subjected item analysis by using t-test. Based on the analysis 36 items were retained and 9 item were rejected. In 36 items 27 are positives and 9 are negatives. It has Face and Content Validity. The reliability of the tool is 0.83 were found by split-half method.

1.4.4.3 Academic Achievement

The Half-yearly marks of the higher secondary school students has considered as Academic Achievement.

4.5 Statistics

Mean, Standard Deviation were used for Description of results, t- test and ANOVA were used to interpret the results and regression Analysis is used to inference the influences of independent variable on dependent variable.

V. DATA ANALYSIS

Table-1: Descriptive Analysis of Self-Concept and Academic Achievement

Variables	Mean	Median	Mode	Skewness	Kurtosis	Status
Anxiety	242.17	240.92	239.11	-0.612	0.214	High
Self-Concept	171.12	172.97	174.06	0.172	0.417	High
Academic Achievement	846.35	846.72	847.01	0.011	0.275	First Class

Table-2: N, Mean, SD and t-value of Anxiety, Study Habits and Academic chievement with respect to the Gender and Locality

Variable	Demographic Variable		N	Mean	Standard Deviation	Standard Error (Mean)	t-Value	Significance
Anxiety	Gender	Male	18 3	243.1 3	10.29	1.436	1.559	Not Significant
		Female	12 7	245.3 7	13.73			
	Locality	Rural	14 6	247.9 1	11.32	1.361	1.676	Not Significant
		Urban	15 4	250.1 9	12.09			
Self-Concept	Gender	Male	18 3	177.0 4	8.35	1.183	1.928	Not Significant
		Female	12 7	179.3 2	11.37			
	Locality	Rural	14 6	173.1 2	9.07	1.209	1.770	Not Significant
		Urban	15 4	175.2 6	11.34			

Academic Achievement	Gender	Male	183	845.86	15.02	1.758	1.621	Not Significant
		Female	127	848.71	15.36			
	Locality	Rural	146	863.41	13.87	1.647	4.130	Significant
		Urban	154	870.21	14.52			

Significance with the Critical Value to the degrees of freedom 298 at 0.05 levels

Table-3: Anxiety, Self-Concept and Academic Achievement with Respect to the Moderator Variables (ANOVA)

Variables	Moderator Variable	Sum of squares		df	Mean square	'F' Value	Significance
Anxiety	Parent Educational Qualification	Between Groups	1873.21	3	624.40	3.33	Significant
		Within Groups	55559.05	296	187.70		
		Total	57432.26	299			
	Management Type	Between Groups	1325.34	2	662.67	3.51	Significant
		Within Groups	56106.92	297	188.91		
		Total	57432.26	299			
	Subject Studying	Between groups	2021.37	2	1010.69	5.42	Significant
		Within groups	55410.89	297	186.57		
		Total	57432.26	299			
Self-Concept	Parent Educational Qualification	Between Groups	896.17	3	298.72	1.71	Not Significant
		Within Groups	51631.47	296	174.43		
		Total	52527.64	299	-		
	Management Type	Between Groups	703.71	2	351.86	2.02	Not Significant
		Within Groups	51823.93	297	174.49		
		Total	52527.64	299	-		
	Subject Studying	Between groups	2418.41	2	806.14	4.78	Significant
		Within groups	50109.23	297	168.71		
		Total	52527.64	299	-		

Academic Achievement	Parent Educational Qualification	Between Groups	554.90	3	184.97	2.91	Not Significant
		Within Groups	18792.51	296	63.49		
		Total	19347.41	299	-		
	Management Type	Between Groups	926.24	2	463.12	7.47	Significant
		Within Groups	18421.17	297	62.02		
		Total	19347.41	299	-		
	Subject Studying	Between Groups	366.04	2	183.02	2.86	Not Significant
		Within Groups	18981.37	297	63.91		
		Total	19347.41	299	-		

*# represents significance of 2.64 and 3.03 at 0.05 levels to the degrees of freedom (3, 296) and (2, 297) respectively

Table-4: Regression Analyses of Predictor Variables and Dependent Variables

ANOVA						
Predictor Variables		Sum of Squares	df	Mean Square	F	Significance
Anxiety and Self-concept	Regression	18939.304	2	9469.652	37.43	0.000*
	Residual	75374.127	298	252.933		
	Total	94313.431	300	-		
a. Dependent Variable: Academic Achievement						
b. Predictors: (constant), Anxiety and Self-concept						

* Dependent variable statistically significant with predictor variables 0.01 level

Table-5: Regression Model Fit Analysis

Predictor Variables	Un-standardized Coefficients		Standardized Coefficients	t-value	Significance
	Beta Value	Standard Error	Beta Value		
(Constant)	66.413	6.07	-	18.322	0.000
Anxiety	-0.317	0.104	0.193	3.521	0.003
Self-Concept	0.432	0.097	0.397	4.354	0.000
a. Dependent Variable: Academic Achievement					
b. Predictors: (constant), Anxiety and Self-concept					

From the table- 5, the regression equation model with un-standardized beta value is
 $Y = 0.432X_1 - 0.317X_2 + 66.413$

Where,

- Y - Dependent Variable
 X - Predictor variables such as Self-Concept is for X_1 and Anxiety is for X_2

From the above equation, 0.432 amount of Self-Concept positively influences 1 unit of Academic Achievement and 0.317 amount of Anxiety negatively influences 1 unit of Academic Achievement of the high school students.

VI. FINDINGS AND CONCLUSION

Findings are the results of the research and conclusion is a justification about the findings of the result. In here, the investigators of the study have presented the justification against the findings as conclusions and they are given below.

- a. The level of Anxiety of higher secondary school students is high. Most of the student coming from the rural areas. The rural area boy and girls students may have exam fear due to the appearance of public examination. This may lead the Anxiety high.
 - b. The level of Self-Concept of the higher secondary school students is high. It may be due to the intelligence and learning experiences of the students.
 - c. The Academic Achievement of higher secondary school students is in first class. It may be due to the capacity of the memorizing and understanding level of the students. Most of the students of the schools are admitted in the basis of merit.
- ✓ There exists no significance difference in Anxiety level of higher secondary school students with respect to the demographic variables such as,
- Gender, and
 - Locality
- The Gender and the Locality of the higher secondary school students does not influence in their Anxiety level.
- ✓ There exists a significance difference in Anxiety level of higher secondary school students with respect to Parental Education.
- The parents possessing high educational qualification are trying to make their children's discipline by implementing more conditions on the home than low educational qualification possessing parents and it may made the significance difference in Anxiety level.
- ✓ There exists a significance difference in Anxiety level of higher secondary school students with respect to Management Type.
- Generally, the government, aided and private management are trying to maintain the standard of quality of education and they are wishing to attain 100% results. This compels the authorities of the management to produce high control on educational institutions and this may lead the significant difference on Anxiety level.
- ✓ There exists a significance difference in Anxiety level of higher secondary school students with respect to Subject Studying.
- Government, aided and private management are trying to maintain the standard of quality of education and they are wishing to attain 100% results. This compels the authorities of the management to produce high control on educational institutions and this may lead the significant difference on Anxiety level.

- ✓ There exists no significance difference in Self Concept of higher secondary school students with respect to the demographic variables such as,
 - Gender,
 - Locality,
 - Parental Education, and
 - Management Type
- Gender, Locality, Parental Education and Management Type are does not make any influences on self concept of the students.
- ✓ There exists a significance difference in Self Concept of higher secondary school students with respect to the Subject Studying.
 - Self concept normally made with the individuals activities. The arts, science and vocational subjects having difference in their individual activities. The science students always feel in scientific manner with others. This may lead the significant differences.
- ✓ There exists no significance difference in Academic Achievement of higher secondary school students with respect to the demographic variables such as,
 - Gender,
 - Parental Education, and
 - Subject Studying
- Gender, Parental Education and Subject Studying does not make any influences on Academic Achievement of the students.
- ✓ There exists a significance difference in Academic Achievement of higher secondary school students with respect to Locality.
 - Most of the urban students are attending the tuition after the class is over. But the students from rural are having the responsibility to help the parents after the class is over. This may lead the significance.
- ✓ There exists a significance difference in Academic Achievement of higher secondary school students with respect to Management Type.
 - The management of the schools stressing the staffs to seek the centum results of the school and it will make the popularization of the school. For that the private school management stresses the students' through the staffs. This may lead the variation in Academic Achievement.
- ✓ There exist influences of Anxiety and Self Concept on Academic Achievement of Higher Secondary school students.
 - The Anxiety is de-promoting the Academic Achievement and Self Concept of the students fostering the Academic Achievement of the students.

VII. REFERENCES

- [1] Ahuja, Ram. (2001). *Research methods: definition of research questions, hypothesis and variables*. New Delhi: Rawat Publications.
- [2] Anjali Pahad, A. (2003). Intelligence, SES and adjustment as correlates of academic achievement. *The Educational Review*, 46(9), 6-9.

- [3] Babu, M. (2008). *Self esteem and academic achievement among B.Ed. trainees in Dharmapuri District*. Unpublished M.Ed. dissertation, Periyar University, Salem.
- [4] Craig, R.Seal, Stefanie, E.Naumann, .Amy, N. Scott, Joanna Royce Dan's. (2013). *Social Emotional Development: A New Model of Student Learning in Higher Education*. Retrieved, Sep 15, 2013, from <http://www.uabri.com/manuscripts/106720pdf>.
- [5] John, W.Best (1998). *Research in Education: Tool meaning*. New Delhi: PHI Learning Private Learning.

To Cite This Article

Suresh, K., Vendhan,R. (2016) :: “Influences Of Anxiety And Self Concept On Academic Achievement Of Higher Secondary School Students” *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5936-5945, Paper ID : IJIFR/V4/E4/048.

COMPARISON OF INTELLIGENCE LEVEL OF SCHOOL GOING SPORTSMEN AND NON-SPORTSMEN OF TRIPURA – A PILOT STUDY

Paper ID	IJIFR/V4/ E4/ 049	Page No.	5946-5949	Research Area	Physical Education
-----------------	-------------------	-----------------	-----------	----------------------	--------------------

Key Words	Intelligence, School, Sportsmen, Non-Sportsmen
------------------	--

Bharti Nigam

Research Scholar,
Department of Physical Education,
Visva-Bharati University, Santiniketan, West Bengal

Abstract

Present situation of athletes' peak performance in sport reflects an increasing equality between the physical, technical and tactical domains, with psychology excelling are important in every stage of training or competition. The mind/brain acts as a psychological tool that has to be managed when one approaches competition. **Aim:** To identify the intelligence level of school going sportsmen and non-sportsmen of Tripura. **Methodology;** **Subjects:** 25 (twenty five: 05 from each game i.e. soccer, volleyball, cricket, track & field and judo) male sportsmen and 25 (twenty five) male non-sportsmen were randomly selected. **Criterion measures:** For assessing intelligence, Mixed Type Group Test of Intelligence developed by P. N. Mehrotra has been utilized. **Administration of test and collection of data:** The questionnaire includes mixed item of verbal and non-verbal type of 50 questions in each. One point for each correct answer was provided and zero for incorrect answer. The number of correct answer has to be counted in each part of verbal and non-verbal which became the raw score of a person. **Statistics:** T-test was employed to compare the intelligence level of sportsmen and non- sportsmen of Tripura and the level of significance was set at 1%, 5% and 10% level. **Result:** Based on the statistical analysis, the intelligence difference between sportsmen and non-sportsmen of Tripura was observed -3.301*** and the difference was found significant.

I. INTRODUCTION

Sport consists of many different and connected parts of psychosocial system and sports scientists are continuously trying to find out its effects and solutions for managing psychological parameters during match/competitions. The sports environment is an inviting

research setting for several reasons. Specifically, it is a naturalistic setting in which sportsmen occupying a variety of roles are often strongly engaged, and sport-related psychological processes and variables can be operationalized with high ecological validity. Beyond that, the sports environment is an important milieu for psychosocial development and adaptation. Earlier, sports skills were not considered as “mental” process and emphasize used to be had given on physical and technical process only. Now, psychologists believe that it is the brain’s superior capacity to process information and communicate with the rest of the body that permits to perform multiple movement involving multiple body parts in relation to time, space, speed, strength and so on. During movements of action an athlete uses his mind and brain to perform the movements or we can say that an athlete's movements are intelligent because they are bio-mechanically and physiologically economic and effective. The mind/brain is considered as a psychological tool that to be managed when one approaches competition. In truth, it is the mind/brain that is the ultimate being, the true leader of performance-management on the play field, and the key to the future of high performance. Cognition is a term which refers to mental process that is involved in gaining knowledge and comprehension, including thinking, knowing, remembering, judging and problem-solving. These all are higher-level functions of the brain and encompass language, imagination, perception and planning. Intelligence refers to complex bio-psychological potential of human beings to process certain kinds of information or data or input from the nature around him in a way of his own. Intelligence is the capacity to meet the demands, needs or challenges in one's life. It is a cognitive activity. Human intelligence has been defined in various ways as a capacity for compression and reasoning. It is the ability to profit from experience to absorb new information and to react reasonably to new situation. It builds up the ability to solve emergent problems. Digiovanna (1937) says that intelligence is exercised in the analysis of skilled movement; the more complex and the more interpretative the movement; the greater the amount of intelligence is necessary to comprehend it. Games and sports are skill based activities varying in movement complexity. Since all skilled behaviour is intelligence, relationship between athleticism and intelligence is undeniable. The nature of this relationship, however, often depends on how close the physical and the intellectual elements are embedded in an activity. Cratty (1972) found most superior athletes in Olympic competitions in Eastern Europe to possess at least average intelligence. With the following features of intelligence the researcher is trying to identify the intelligence level of school going sportsmen and non-sportsmen in the state of Tripura.

II. METHODOLOGY

- i.) **Selection of subjects:** For the purpose of the study, a total of 50 male subjects were randomly selected i.e. twenty five (25) from sportsmen (05 from each game i.e. soccer, volleyball, cricket, track & field and judo) and twenty five (25) from non-sportsmen of school going students of Tripura.
- ii.) **Selection of variable:** The selected variable of intelligence as considered as independent variable whereas the sportsmen and non-sportsmen were adopted as dependent variables.

- iii.) **Criterion measure:** As a consequence, a number of intelligence inventories have been developed but for the present study, Mixed Type Group Test of Intelligence developed by P. N. Mehrotra has been used.
- iv.) **Administration of test and collection of data :** Mixed Type Group Test of Intelligence questionnaire includes mixed items of verbal and non-verbal type of 50 questions in each. Verbal part of the test contains analogy, number series, classification, vocabulary and reasoning whereas non-verbal test contains analogy, arrangement, classification, digit symbol and part fitting tests. Time test limit is of twenty minutes only. One point for each correct answer was provided and zero for incorrect answer. Scoring keys have been prepared for verbal and non-verbal part. The number of correct answer has to be counted in each part of verbal and non-verbal which became the raw score of a person. Number of tick marks for every sub-test should be counted and then these sub-scores should be added together to get a composite score.
- v.) **Statistical Analysis:** To assess the intelligence level of sportsmen and non-sportsmen, T-test was employed between the means and the level of significance was set at 1%, 5% and 10% level.

III. RESULT AND DISCUSSIONS

In order to determine the significance of difference on intelligence level of sportsmen and non- sportsmen of Tripura, results have been presented in table- 1.

Table- 1: Significant difference between the means of intelligence

	Mean	SD	SE	'T' ratio	Sig P.
Sportsmen	19.16	4.259	1.66	-3.301***	0.002
Non-sportsmen	24.64	7.123			

***Significant at 1% level

**Significant at 5% level

* Significant at 10% level

It is evident from the table - 1 that the significance of mean difference between school sportsmen and non-sportsmen towards intelligence has shown significant difference, as the calculated value of t-ratio – 3.301*** was at $p < 0.002$ level. The result of the study indicates that the schools going sportsmen and non-sportsmen have different intelligence levels. Further, we can state that the non-sportsmen have possessed more intelligence than the sportsmen. The symbolic diagram to exhibit the image of intelligence level of school sportsmen and non-sportsmen has been presented in figure-1.

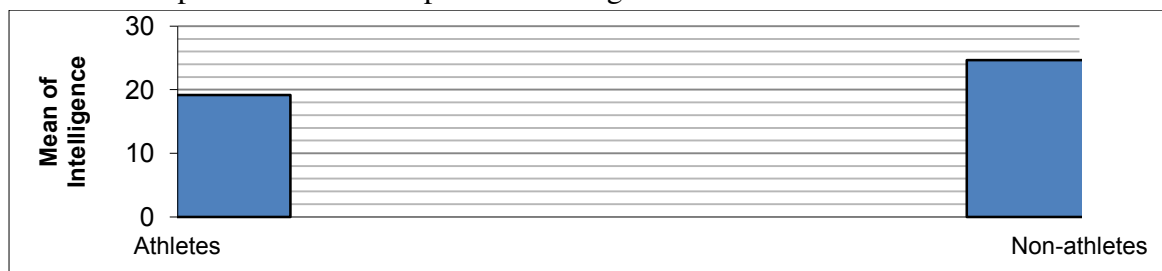


Figure-1: Discussion of Finding

In the light of the findings, significant difference has been found on intelligence level of school going sportsmen and non-sportsmen of Tripura.

IV. CONCLUSION

Based on the finding, it can be concluded that the non-sportsmen have better adequate cognitive ability than the sportsmen of school going students of Tripura.

V. REFERENCES

- [1] M.L.Kamlesh (2015), "Psychology in Physical Education and Sports" 6th Ed., ISSN 978-81-7524-609-6, (Khel Sahitya Kendra: New Delhi): pp. 507-547.
- [2] P. N. Mehrotra, "Mixed Type Group Test of Intelligence", Agra: National Psychological Corporation: pp. 1- 24.
- [3] What Is Cognition? Retrieved From [Http:// Psychology.About.Com /Od/ Cindex/ G/Def_ Cognition.Html](http://Psychology.About.Com/Od/Cindex/G/Def_Cognition.Html) On 09th December, 2011.
- [4] J. Robert Sternberg (1987), "Intelligence", (The Oxford Companion To The Mind Oxford: Oxford University Press): Pp. 375-379.
- [5] Bryant J. Cratty (1972), "Physical Expression of Intelligence. Englewood", (Cliffs, NJ: Prentice Hall).

To Cite This Article

Nigam, B. (2016) :: "Comparison Of Intelligence Level Of School Going Sportsmen And Non-Sportsmen Of Tripura – A Pilot Study" *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5946-5949, Paper ID: IJIFR/V4/E4/049.

WOMEN ENTREPRENEURSHIP AND SMALL BUSINESS- A STUDY WITH REFERENCE TO SELF HELP GROUPS

Paper ID	IJIFR/V4/ E4/ 051	Page No.	5950-5954	Research Area	Management
-----------------	--------------------------	-----------------	------------------	----------------------	-------------------

Key Words	Women's Entrepreneurship , Organization, Socioeconomic, Commendable, Self Help Group, Microfinance Institution
------------------	---

1 st	Subha K.	Research Scholar, Department Of Management Bharathidasan University, Trichy-TamilNadu
2 nd	Dr. R.Thanga Prashath	Assistant Professor, Department of Management Studies, Srimad Andavan Arts & Science College, Trichy-TamilNadu

Abstract

Women entrepreneurship has been recognized as an important source of economic growth as they create new jobs for themselves and others and also provide society with different solutions to management, organization and business. Women's entrepreneurship contributes to the economic well-being of the family and communities and also reduces poverty. The growth of Self-Help Groups (SHGs) is an evidence of the fact that women are coming out of their shells and maintaining their citizenship in the city. This study is carried out with the specific objective to know the socio- economic background of the women SHG's, their knowledge, skills and earning capacity. Keeping this in mind the researcher made a study on entrepreneurship and small business with reference to Women SHGs in Trichy City. Research data have been collected from various available sources and systematically analyzed with suitable tools. The analysis clearly shows that the role of women entrepreneurs' contribution to the society is commendable.

I. INTRODUCTION

Entrepreneurship plays an eminent function in creating an avenue for employability for rural communities, providing self-employment for those who have started-up a business of their own and enhancing the economic status of the rural sector as well. Entrepreneurship has

transformed many entrepreneurs into successful business persons and generated income for rural communities. Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. Self-Help Group is a small voluntary association of poor people preferably from the same socio-economic back drop. The micro-credit given to them makes them enterprising; It can be all women group, all-men group or even a mixed group. A **selfhelp group (SHG)** usually composed of 10–20 local women). In India, many SHGs are 'linked' to banks for the delivery of micro credit for small business.

1.1 Statement of problem

Women in India have been oppressed culturally, socially, economically and politically for centuries. They are exploited at home, in the families, in the society and in the country. In the Multi ethnic and multi cultural society like that exists in India, such exploitation takes various Forms. The core of the problem is that they shoulder a number of responsibilities, but they are not given adequate participatory or decision making power in the family or elsewhere. Women Can gain such power, if their economic status, cultural and social status improves. Such type of Overall improvement can be taken care by SHGs. Involvement in Self Help Groups has enabled women to gain greater control over resources like material possession, intellectual resources like knowledge, information, ideas and decision making in home, community, society and nation.

1.2 Objectives of the study

- ✓ To know the socio-economic status of Women Self Help Groups in Trichy city.
- ✓ To evaluate the performance of women self Help Groups in entrepreneurship.
- ✓ To identify the issues related to the Women Self help groups.
- ✓ To offer suggestions based on the findings.

1.3 Scope of the study

The present research is to study the critical study of self help groups with reference to Trichy District. This study would be of great help to the implementing agencies to bring necessary improvements in the self help groups for attaining the overall improvement of women. The knowledge on these aspects could be used to develop strategies to motivate self help group members for their enhanced participation in the group. Further the study would highlight the role and importance of microfinance institution in SHGs.

1.4 Methodology

The data used for the study is secondary data comprising of official websites, journals, magazines and articles. The geographical area selected for the study is Trichy. Limitation of the study is that the area is confined only to Trichy. Since the data is secondary it is more dependable and reliable. The present study covers only women entrepreneur who are the members of SHGs.

II. WOMEN ENTREPRENEURSHIP IN INDIA

2.1 Introduction of Women Entrepreneur

Entrepreneurship is the purposeful activity of an individual or a group of associated individuals, undertaken to initiate, maintain or aggrandize profit by production or distribution

of economic goods and services. The government of India has defined Women Entrepreneurs based on women participation in equity and employment of a business enterprise. Accordingly, a women entrepreneur is defined as “those women who think of a business enterprise, initiate it, organize and combine the factors of production, operate the enterprise and undertake the risk and handle economic uncertainty involved in running a business enterprise. It is estimated that women entrepreneurs presently comprise about 10% of the total number of entrepreneurs in India, with the percentage growing every year. If the prevailing trends continue, it is likely that in another five years women will comprise 20 % of the entrepreneurial force. Even though women own around 10% of the total enterprises in the small sector, the gross output of these units is just 3.5% of the total output of the SSI sector.

In contrast, in developed countries such as United States, women own nearly 91 lakh small businesses and the number of women-owned start-ups is going at nearly twice the rate of their male counterparts. India has 397 million workers, 123.9 million are women, 106 million are in rural areas, 18 million are in urban areas, Only 7% of India’s labour force is in the organized sector; 93% is in unorganized sector.

2.2 Women Entrepreneurs in India

Table 1: Women Entrepreneurs in India

State	No of units Registered	No of women entrepreneurs	%
Tamil Nadu	9618	2930	30.36
Uttar Pradesh	7980	3180	39.84
Kerala	5487	2135	38.91
Gujarat	3872	1538	39.72
Karnataka	3822	1026	26.84
Bihar	7344	1123	15.04
Other States & UTS	14576	4185	28.71
Total	64796	19971	32.82

2.3 Self Help Groups

In 1975, Prof. Mohammed Yunus of Bangladesh in an effort to bring the efforts of the women force to the main stream of economy started self-help groups in Bangladesh and inculcated the habit of thrift and savings among the poorest. Now, the women groups have grown with a bank named Bangladesh Grameen Bank (Karmakar K.G) The Self-Help Groups being comprised of group of persons get empowerment to solve most of their problems of non-financial marketing, better adoption of technology and training for realizing the human potential for entrepreneurial development. The objective of SHGs is to develop strong, cohesive, self help women groups through inculcation of spirit of self help and team spirit. This results in overall leadership development through exposure to SHGs management change from workers status to managers status by putting control in their own hands, access to market through training, assisting and encouraging need based tapping of alternate resources inclusive of capital.

III. ANALYSIS AND FINDINGS

The role of women entrepreneurs is increasing drastically every year. The participation of women has increased from 22.3 in 1990-1991 to 31.6% in the year 2010-2011. This is a source from the World Bank report 2010-2011 & WAVE conference report.

Year	No. of SHGs Formed Total Since 1.4.99	No. of Women SHGs Formed Total Since 1.4.99	Percentage of women SHGs Formed Total Since 1.4.99
2009-2010	3708410.35	2651450	71.49
2010-2011	3988926.34	2955287.79	74.08
2011- 2012 Till date	3943127	2865212	72.66

71.5% of the women SHGs formed in 2009 and 2010. For the duration of 2010- 2011, this ratio stood at 74.08%. Out of the whole figure of Self Help Groups formed, 70% belong to women.

3.1 Micro Finance

Micro Finance institution started in India in 1980s through Self Help Groups (SHGs) model. It is the Grameen replication model of Bangladesh. Self Help Groups have emerged as an alternative development strategy to promote the common interest of the weak particularly the rural poor. Microfinance programme in India is growing rapidly and receiving increasing attention from the financial institutions, non-governmental organizations (NGOs) and the Government, as an instrument that can transform lives of the women. Microfinance took roots in 1992-93 with the launching of the Self-Help Group (SHG)-Bank linkage programme by the National Bank for Agriculture and Rural Development (NABARD). Up to March 2005, over 16.18 lakh SHGs had been linked with banks with 24.25 million poor families being brought within the fold of formal banking services. The cumulative bank loan disbursed since the inception of the programme stood at Rs 6,898.46 crores. Over 90 per cent of the SHGs linked to banks under this programme comprise women groups. In this process, 35294 branches of 560 banks comprising 48 commercial banks, 316 cooperative banks and 196 RRBS have been involved in disbursing credits to SHGs. Currently, a total of 25 lakh such women's SHGs across the country access loans at rates ranging from 11.5% to 14%. The government expects the number of women's SHGs to swell up to 60 lakh and their total membership to increase to 7 crore in the next five years. Currently, these SHGs have a total of 3 crore members. Commensurate with the rise in the number of SHGs, the government believes that the size of the total loan disbursed to the sector will also increase from Rs 20,000 crore to Rs 1 lakh crore within the time period.

IV. SUGGESTIONS

- There should be continuous attempt to inspire, encourage, motivate and cooperate women entrepreneurs.
- SHGs should be provided with more loans from the government.
- The government should introduce entrepreneurial development programme for women.

- Finance should be made available to women entrepreneurs at a reduced rate of interest.
- Better educational facilities and schemes should be extended to women folk from the government.
- Extension participation programme may be arranged with extension agencies for the SHGs to visit their business houses to know the functions and its administration so that it creates awareness among the women group.

V. CONCLUSION

Self employment is better suited to women. If she is her own master of any of her work schedule, she can adjust her work. At present women have broken the monopoly of men and proved that they are not inferior to men. Over the past few decades the women has been breaking traditional role of a mother or a house wife. It is clear from the study that women entrepreneur of SHGs has good work force, under the dynamic setting of business, if women entrepreneur is given a proper guidance and training to enhance the profitability of the enterprises the future will be bright and prosperous.

VI. REFERENCES

- [1] http://shodhganga.inflibnet.ac.in/bitstream/10603/5387/8/08_chapter1.pdf
- [2] http://gcoe.ier.hit-u.ac.jp/CAED/papers/id101_Govindasamy.pdf
- [3] [http://en.wikipedia.org/wiki/Self-help_group_\(finance\)](http://en.wikipedia.org/wiki/Self-help_group_(finance))
- [4] Hashemi, S. M., Schuler, S. R., & Riley, A. P. 1996. Rural credit programs and women's empowerment in Bangladesh. World Development, 24(4).
- [5] www.google.com
- [6] Entrepreneurial development by Dr S.S.Khanka S.chandPublishing. Source-
<http://rural.nic.in/sgsy/sgsyframetop.asp?id=02>, retrieve on 28th
- [7] August 2011
- [8] CMIE report 2011
- [9] <http://theglobaljournals.com/paripex/file.php?val=MTY5Mg==>
- [10] <http://wcd.nic.in/>
- [11] Govindarajan, Latha Padhmanabhan, V1 IUP Journal of Organizational Behavior. Jul2013, Vol. 12 Issue 3,
- [12] Suja, S2 Global Management Review. 2012, Vol. 6 Issue 3
- [13] Vetrivel S.C3 Advances in Management. Jun2010
- [14] Bali Swain, Ranjula Wallentin, Fan Yang4 International Review of AppliedEconomics. Jul
- [15] K. Geetamma Bulla, B.5 Golden Research Thoughts. Jul 2013.

To Cite This Article

Subha, K. , Prashath, T.R. (2016) :: “Women Entrepreneurship And Small Business- A Study With Reference To Self Help Groups” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 5950-5954, Paper ID: IJIFR/V4/E4/051.

IMPACT OF JOB STRESS AND PERFORMANCE IN ORGANISATION

Paper ID: IJIFR/V4/ E4/ 055 Page No. 5955-5961 Research Area Management

Key Words Stress, Emotional Intelligence, Strategies

1 st	D.Vaishnavi	Assistant Professor, PG & Research Department of Management , Srimad Andavan Arts & Science College, Trichy-TamilNadu
2 nd	Dr. S. Revathi	Associate Professor, PG & Research Department Of Commerce, Periyar EVR College, Trichy-TamilNadu

Abstract

The 21st century is also an era of stress. Individuals face job stress in their organization and daily lives due to globalization, information technology revolution, and speed of life. The most important effects of these can be seen in the business world, and they can manifest themselves as changes that organizations make in their structures, strategies, activities, and technologies. Constantly changing organizations impose new roles and duties on their employees which have effect on their work life balance, and the employees who want to handle new roles and duties need to have efficiency in intelligence quotient (IQ) and efficiency in emotional quotient (EQ) in the processes of decision making and problem solving. A completely stress-free life is impossible, and stress becomes a characteristic of human existence. Individuals have used various methods to handle stress, including using their intelligence, especially their emotional intelligence.

I. INTRODUCTION

Stress is an unwanted reaction people have to severe pressures or other types of demands placed upon them. A huge and multi fields literature points a lot of key factors such as work environment, management support, work load etc in determining the stressful the work can be and its effect on employee physical and mental health. Job stress in organizations is widespread. About half of all American workers feel the pressures of job-related stress. Extensive research shows that excessive job stress can adversely affect the emotional and physical health of workers. The result is decreased productivity, less satisfied, and less

healthy workers. This paper will first discuss the symptoms and causes of stress, and then explore ways in which managers might reduce stress in themselves and their subordinates.

II. JOB STRESS STATISTICS

Numerous studies examining job stress sound an alarming bell about the mental and physical health of American workers:

- A Northwestern National Life study found that 40 percent of workers report their job is “very or extremely stressful.” And that one-fourth of employees view their jobs as the number one stressor in their lives.
- A Families and Work Institute study found 26 percent of workers report they are “often or very often burned out or stressed by their work.”
- A Yale University study found 29 percent of workers feel “quite a bit or extremely stressed at work.”
- A Princeton Survey Research Associates study reports that three-fourths of employees believe the worker has more on-the-job stress than a generation ago.
- A Gallup Poll found that 80 percent of workers feel stress on the job, and nearly half reported that they needed help in learning how to manage it.
- According to an article in Shape Magazine, women are 60 percent more likely to suffer from job stress than men.

III. SYMPTOMS OF STRESS

Stress symptoms may be affecting your health, even though you might not realize it. You may think illness is to blame for that nagging headache, your frequent insomnia or your decreased productivity at work. But stress may actually be the culprit.

1) Common effects of stress:

Indeed, stress symptoms can affect body, thoughts, feelings, and behavior. Being able to recognize common stress symptoms can give a jump on managing them. Stress that's left unchecked can contribute to many health problems, such as high blood pressure, heart disease, obesity and diabetes.

2) Workplace Stress

The harmful physical and emotional responses that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting these demands. In general, the combination of high demands in a job and a low amount of control over the situation can lead to stress.

3) Common effects of stress on body

- Headache
- Muscle tension or pain
- Chest pain
- Fatigue
- Change in sex drive
- Stomach upset

- Sleep problems
- 4) Common effects of stress on mood**
 - Anxiety
 - Restlessness
 - Lack of motivation or focus
 - Feeling overwhelmed
 - Irritability or anger
 - Sadness or depression
- 5) Common effects of stress on r behavior**
 - Overeating or undereating
 - Angry outbursts
 - Drug or alcohol abuse
 - Tobacco use
 - Social withdrawal

6) Emotional Intelligence and Reducing Workplace Stress

Whether or not you are in a job where the environment has become increasing stressful, you can keep a great measure of self-confidence and control through understanding and practicing emotional intelligence. Emotional intelligence is the ability to both manage and use your emotions in ways that are constructive and positive. In relation to work and success, emotional intelligence is just as relevant and important as intellectual ability. Emotional intelligence involves communicating with others in ways that draw them to you while overcoming difference, defusing tension, stress, and repairing wounded feelings.

7) The Four Major Components of Emotional Intelligence

- **Self-Management:** Self-management is the ability to control your emotions and your own behaviors, adapting to the circumstances you find yourself in.
- **Self-Awareness:** Self-awareness is the ability to recognize your own emotions as well as their impact, using your gut feelings in order to guide the decisions you make.
- **Social Awareness:** Social awareness involves the ability to sense, understand, and react to the emotions others are experiencing and the ability to feel comfortable socially.
- **Relationship Management:** Relationship management involves the ability to inspire, connect with, as well as influence others and the ability to manage conflicts that arise.

IV. WAYS TO REDUCE WORKPLACE STRESS

If the level of stress at work is interfering with ability to do job, is having a negative impact on health, or is affecting reability to manage personal life need to take action and care for it. Begin by paying attention to emotional and physical health, ensuring that own needs are taken care of. When own needs are taken care are stronger and more able to

deal with stress. As begin to feel better and will have an increased ability to manage workplace stress without feeling overwhelmed. Small things have the ability to lift mood while increasing level of energy, making feel more in control. Do things step-by-step, making more positive lifestyle choices, and before know it.

1) Employers, Managers, and the Reduction of Workplace Stress

As far as managers are concerned, it is in their best interest to keep the stress levels in the workplace to minimum levels. Managers can act as positive role models, particularly during times of high stress. If a manager has the ability to remain calm in work situations that are stressful it is far easier for their employees to remain calm. In addition, there are several organizational changes that employers and managers can make in order to reduce workplace stress, presented below.

- Offer rewards and incentives
- Show that individual workers are valued
- Provide opportunities for career development
- Establish a zero-tolerance policy for harassment
- Clearly define employees' roles and responsibilities
- Consult employees about scheduling and work rules
- Provide opportunities for social interaction among employees
- Make management actions consistent with organizational values
- Make communication friendly and efficient, not mean-spirited or petty
- Give workers opportunities to participate in decisions that affect their jobs
- Share information with employees to reduce uncertainty about their jobs and futures
- Promote an "entrepreneurial" work climate that gives employees more control over their work
- Be sure the workload is suitable to employees' abilities and resources; avoid unrealistic deadlines
- Praise good work performance, both verbally and officially, through schemes such as Employee of the Month

a. How to Reduce Stress?

It is of utmost importance that an organization takes this issue seriously. The organization can help reduce stress by:

- Reducing the number of hours for which their employees would have to work per week. This will, in the long run, contribute to a more efficient functioning of the organization, as employees would have more time to rest at home and will come back the next day feeling refreshed.
- Working hours should be flexible. This may also include shifts and the rotation of employees.
- A tried and tested technique that many organizations have begun using is the provision of lounges and other recreational facilities to help employees relax during the day should they require some time off.

- Female employees may find that they do not have enough time to spend with their newborn if they have just had a baby. providing longer maternity leave could help female employee to come back to work without having too much on her mind with regard to the baby and any postnatal depression.
- Another idea would be to provide childcare facilities at the office so that mothers with young children could peep in and ensure their kids are okay every few hours.
- As an employee, you should also make it a point to occasionally have a casual chat with employees to ensure that they are satisfied with their jobs and have no issues at work.
- Also encourage them and appreciate and praise him/her for tasks carried out very well. This would reduce any worries they may have of the risks of losing their jobs and help them to feel more secure.

2) The Impact of Stress on Performance

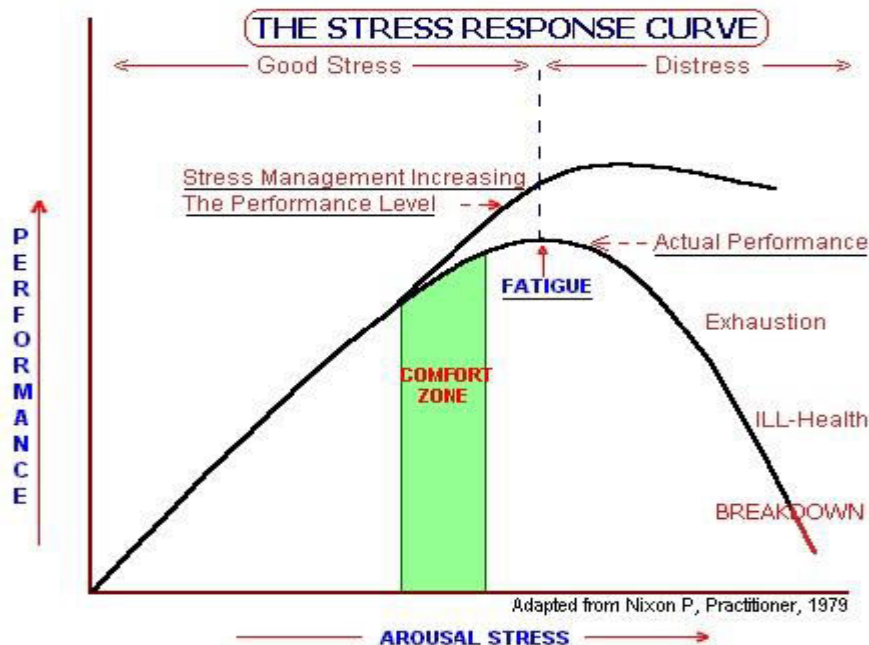


Figure 1: Stress Response Curve

- **Positive Effects:** As shown by the graph, performance levels increase when stress management is effective. Stressors such as pressure and demands can facilitate better stress response and thus, higher levels of performance
- **Negative Effects:** When stress is perceived as uncontrollable or unmanageable, the person begins to experience a gradual to drastic decrease in performance levels, causing a decline in productivity and enthusiasm to respond to the stress.

V. STRATEGIES FOR MANAGING STRESS

Stress experienced by the employees in their job has negative impact on their health, performance and their behaviour in the organization. Thus, stress needs to be managed effectively so as to set off these harmful consequences. Strategies for managing stress are as follows-

1) Organizational Strategies For Managing Stress

- i. Encouraging more of organizational communication with the employees so that there is no role ambiguity/conflict. Effective communication can also change employee views. Managers can use better signs and symbols which are not misinterpreted by the employees.
- ii. Encourage employees' participation in decision-making. This will reduce role stress.
- iii. Grant the employees greater independence, meaningful and timely feedback, and greater responsibility.
- iv. The organizational goals should be realistic, stimulating and particular. The employees must be given feedback on how well they are heading towards these goals.
- v. Encourage decentralization.
- vi. Have a fair and just distribution of incentives and salary structure.
- vii. Promote job rotation and job enrichment.
- viii. Create a just and safe working environment.
- ix. Have effective hiring and orientation procedure.
- x. Appreciate the employees on accomplishing and over-exceeding their targets.

2) Individual Strategies For Managing Stress

- i. The employees should make a "to-do" list daily, prioritize the acts in the list and plan the acts accordingly. Take regular breaks during work to relax you. By effective time management, the employees can achieve their targets timely and can meet work pressures and, thus, avoid stress.
- ii. Do hard work. Strive to achieve your goals but do not do it to the harm of family, health, or peer.
- iii. Indulge in physical exercises. It helps in effective blood circulation, keeps you fit, diverts mind from work pressures.
- iv. Encourage a healthy lifestyle. Take a regular sleep, have plenty of water, have healthy eating habits. Promote relaxation techniques such as yoga, listening music and meditation.
- v. The employees should have optimistic approach about their work. They should avoid connections with negative approach employees.
- vi. The employees should have emotional intelligence at workplace. They should have self-awareness, self-confidence and self-control at workplace.
- vii. The employees should build social support. They should have close connections with trustworthy peer who can listen to their problems and boost their confidence level. This social network will help the employees to overcome stress.
- viii. Employee counselling is a very good strategy to overcome employee stress. Through counselling, employees can become aware of their strengths and how to develop those strengths; their weaknesses and how to eliminate them; and they can develop strategies for changing their behaviour. Employees are also given career counselling which helps in reducing their ambiguities with regard to career.

- ix. Find a fun way to release stress, such as, cracking jokes, playing tennis, golf, etc.
- x. Do not remain pre-occupied with yourself. Turn your focus outwards. Help others. This will release some stress.

VI. CONCLUSION

To summarize, the various factors responsible for job stress can be broadly classified into external factors relating to organisation and work-family conflicts, and internal factors. Certain occupations are more stressful, especially those in which there is high emotional involvement. The holistic view of antecedents to job stress should take into account the interaction between the three categories of factors and the impact of socialization which has proved to be a significant moderator in stress perception and in coping with it. Further, qualitative and empirical studies are required to prove the importance of the factors in an Indian context to study the culture specific dimensions of the "person-stress" interaction.

VII. REFERENCES

- [1] Adams, J.D. (1980). *Improving Stress Management: An Action-Research-Based OD Intervention*,
- [2] Anderson R. (2003). Stress at work: the current perspective. *The Journal of The Royal Society for the Promotion of Health*, 123; 81
- [3] Anderson E.S., Coffey S.B., & Byerly T.R. (2002). Formal Organizational Initiatives and Informal Workplace
- [4] Helena M Addae. (2006). Stress at work: Linear and curvilinear effects of psychological-, job-, and organisation-related factors: An exploratory study of Trinidad and Tobago. *International journal of stress management*, vol .13, No. 4, 476-493.
- [5] Jamal, M. (2007). Job stress and job performance controversy revisited: An empirical examination in two countries. *International journal of stress management* , vol .14, No. 2, 175-187.
- [6] *Under-standing and Managing Stress: A Book of Readings*. University Associates, San Diego, California, pp.179-198. Practices: Links to Work-Family Conflict and Job-Related Outcomes. *Journal of Management* 28, 787.

To Cite This Article

Vaishnavi, D. , Revathi, S. (2016) :: "Impact Of Job Stress And Performance In Organisation" *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 5955-5961, Paper ID: IJIFR/V4/E4/055.

A STUDY ON IMPACT OF MANAGEMENT TRAITS OF SELF HELP GROUP MEMBERS ON WOMEN EMPOWERMENT IN MADURAI DISTRICT

Paper ID

IJIFR/V4/ E4/ 057

Page No.

5962-5974

Research Area

HRM

Key Words

Women Empowerment, Self Help Group, Management Traits, Effective Functioning, Structural Equation Modeling Technique

1 st	Praba. K	Research scholar, Research & Development center, Bharathiar University, Coimbatore-TamilNadu
2 nd	Dr.Kavitha Shanmugam	AssociateProfessor, SRM School of Management Chennai-TamilNadu

Abstract

Women are an integral part of every economy. All round development and harmonious growth of a nation would be possible only when women are considered as equal partners in progress with men. Empowerment of women is essential to harness the women labour in the main stream of economic development. Empowerment of women is a holistic concept. It is multidimensional in its approach and covers economic, political, social, cultural and familial aspects. Of all these aspects of women development is of utmost significance in order to achieve a lasting and sustainable development of society. Effective application of management traits in the performance of self-help groups is an important means for attaining this lasting women empowerment. This paper helps to explore the important Management traits influencing women empowerment in the self help groups. Also, this study offer suggestions for effective functioning of self help groups in the study area. The statistical tool which is used in this study is inferential statistics. The researchers have used structural equation modeling technique. In this study, SEM using confirmatory factor analysis is applied to study the impact of management traits on self help group women empowerment.

I. INTRODUCTION

The issues of empowerment of women moved center stage during the last three decades of the second millennia, mainly through the efforts of the United Nations by declaring 1975 as the women's year and the decade 1975-82 as the women's decade. This period coincided with the sixth five year plan period in India when the approach was shifted from welfare to development and further efforts during the subsequent plans culminated in the framing of a National Policy for Empowerment of Women approved by the cabinet on 20th March 2001. However, despite constitutional guarantee of equality and justice, legislative support of a plethora of acts and introduction of policies and programs, the goals of gender equality and justice, empowerment of women still remains a distant dream for Indian women. The human development index as calculated by the UNDP is based on three major components life expectancy at birth, literacy and per capita purchasing power. Among the 187 countries ranked, India gets the 135th rank with the value of 0.586 which falls in the medium human development category in the year 2013. When compared to the BRICS countries India remained at the bottom with lowest the HDI value. Gender Development Index is also available for 143 countries in which India ranked 108. Indian scenario presents a dismal picture on several key indicators contributing to human development. The first alarming signal is the sex ratio adverse to women. As per the 2011 census sex ratio is 947 and it is further disappointing that at 0-6 years of age group, the sex ratio is only 927 which constitute about 48.46% of the total population of 1.29 billion. As per 2011 census, the rate of women education is only 74%, where as for men it is 87%. 26% of women population in Tamil Nadu is uneducated and a sizeable percentage did not get beyond school education. The poor health of women coupled with low literacy profiles adversely affects their work participation rate and the resulting standard of living.

Despite all our plans, female adult literacy in the country is still low and our women are continue to be illiterates and unaware of their rights. It is true that education open up new vistas to women but education alone does not solve problems. For the mass of our women it cannot be education of traditional kind. What they need is capacity building which means training in vocation skills, coupled with a basic knowledge related to their local situations. Special incentives to encourage the education of girls in regular schools particularly in rural areas and urban slums are an urgent necessity.

1.1 Various Dimensions of Women Empowerment

Women Empowerment has mainly five important dimensions such as economic, political, social/cultural, personal and familial.

i. Economic Empowerment: A woman is said to be economically empowered when she gains power as a result of increased access to economic resources. The means of achieving economic empowerment are: increase in income, access to finance, ability to make decisions regarding the utilization of money/credit etc.

ii. Political Empowerment: A woman is said to be politically empowered when she has the awareness and power to act in accordance with the rights and rightful role of women in

society and polity. The means of achieving political empowerment are: political awareness, participation in political activity, membership in political parties, position of power etc.

iii. Socio / Cultural Empowerment: A woman is said to be socially/culturally empowered when has the power to participate in collective/cultural activities in the society. The means of achieving social/cultural empowerment are: social status, mingling with others, access to various organizations, social involvement, participation in seminars/competition etc.

iv. Personal Empowerment: A woman is said to be personally empowered, when she has the power to increase her own self-reliance and self-strength/confidence. The means of achieving personal empowerment are economic freedom, freedom of action, ability and involvement in decision-making, self-esteem, gender equality, improvement in health and knowledge etc.

v. Familial Empowerment: A woman is said to have familial empowerment when she has the power to improve her own family welfare. The means of achieving familial empowerment are improvement in family income, support from the spouse, improvement in family relationship, education to children, and medical care to family members, improvement in basic facilities and amenities, etc.

1.2 Process of Women Empowerment

Empowerment as an individual and collective process is based on the following five steps:

- Self-reliance
- Self-awareness
- Collective mobilization and organizations
- Capacity building
- Exposure to and interaction with external institutions

Empowerment is a long process. It has to pass through different stages. In the first stage, women should be trained to look into the situation from a different perspective and recognize the power relations that perpetuate their oppression. At this stage, the women share their feelings and experiences with each other and build a common vision and mission. In the second stage, the women tried to change the situation by bringing about a change in the gender and social relations. In the third stage, the process of empowerment makes them more mature to realize the importance of collective action. As empowerment seeks to alter the gender and power relations, there could be a certain social or gender conflicts. In the fourth and final stages the women folk must acquire skills towards capacity building through their exposure and interaction with the external world. The process of empowerment could also face certain obstacles emanating from the patriarchal system, traditional beliefs and political system. The results of empowerment, however, will not be confined to women. The other member of the families will also benefit from the empowerment process.

1.3 Concept of Self Help Groups

A Self Help Group is conceived as a small, economically homogenous and affinity group of poor, voluntarily coming together with the objectives viz. (1) to save small amounts regularly (2) mutually agreed to contribute to a common fund to meet their emergency needs

and (3) to provide collateral free loans to members with terms decided by groups and resolve conflicts through collective leadership and mutual discussion. The size of the group is restricted to small numbers ranging from five to twenty to ensure the group solidarity. These group based credit program equip the poor with access to financial services on easy terms and conditions. The SHG is formed and groomed by a NGO or a Bank branch or Government Agency acting as a SHPI. Linked with Micro Finance, the SHG movement has now been accepted as an effective intervention strategy for women empowerment.

1.4 Management Traits in Self-Help Groups

Strong savings and credit groups owned and managed by the community itself need competent and committed development facilitators, strong cadre of leaders, and enlightened and alert members. Hence the management and governance of Self-Help Groups that promotes democratic traditions is crucial for its success. Evolution of norms or rules and regulations for self-governance, participatory decision-making, diligence and self-discipline among group members coupled with strong enforcement mechanism for control over affairs are sufficient conditions for transparency in group operations. These rules and regulations are not mere statements but reflect the understanding of group norms by members through their conduct in group activities. Rules and regulations of the group, therefore, need to apprehend conflict situation in day-to-day functioning of group and provide ready solutions. To function effectively these groups and its members need few traits which would broadly cover:

1.4.1 Leadership

It is apt to realize that leadership in a self help group is a verb and not a noun. The range of leadership responsibilities includes identification of problems faced by the group members, organizing, implementing and coordinating the group plans, assisting and motivating the members in information sharing, maintaining records of accounts, resolving conflicts and disputes among group members, representing group's interest to outside bodies, developing systems and procedures for group members in discharging their routine functions, making negotiations and doing business with other organizations, conducting meetings and facilitating group decisions and ensuring transparency in group functioning.

1.4.2 Group Meetings

Group meetings include times when members gather either periodically or at short notice to discuss the activities of the group and decide on its future actions. All activities in self-help group revolve around meetings at which members' access savings and credit services, share ideas and experiences, learn from each other and also receive education and training. Active participation in the deliberations by all members must be encouraged with expression of free and frank views.

1.4.3 Decision Making

Self help groups and village organizations are grass root level democratic institutions of rural people. Decision making plays an important role in the management of these institutions of rural poor. Being institution of people, decisions are bound to be taken in the management of their day to day activities. The collective decision making of SHG members

should lead to sharing of responsibilities, transparency of operation, conflict resolution, increased participation and improved social cohesion among members which will in turn lead to sustainability of their institutions.

1.4.4 Resource mobilization

Resource mobilization is, perhaps, the most important function in self-help group. Some of the best practices include Minimum compulsory thrift contributions to be made by all members, periodicity and quantum of thrift decided by group members themselves keeping in view the ability of poorest member among them to pay the agreed amount at predetermined intervals, thrift collections must be utilized for lending to group members and must not be kept idle, penal provisions like fines, penalties, etc. must be enforced against late payment or default in thrift. Hence, continuity of thrift is a regular group process and any attempt to obstruct or discontinue it after receipt of revolving fund, subsidy, grant or even a bank loan can only be a self-inflicting move.

1.4.5 Resource Utilization

Providing credit access to members of poor household on sustainable basis is the primary objective of self-help group. A well conceived loan programme in a self-help group will enhance its attractiveness to the members. These loans are often given for various purposes without insistence on collateral but are available at cost. There is no compulsion to avail the loan facility, as such those who avail loans have to make a choice to pay the cost, or have no credit at all. Some of the best practices in the area of resource utilization include: offering small, short-term loans for meeting emergent and consumption requirements only to their members, the internal lending must preferably commence from the date of first pooling of savings, need based lending is strongly recommended by active groups, □group must have a system of giving differential priorities to several purposes for taking loaning decisions, where in urgency of purpose is given precedence while selecting a borrowing member.

1.4.6 Financial Sustainability

Mobilizing micro-thrifts is only part of comprehensive savings serve Self- Help Groups. Small savings from resource-poor households need operative protection against loss of deposits. Misappropriation in savings and credit groups as well as imprudent lending from internally generated deposits threatens the security of savings programme. They have to be shielded against the financial and non-financial risks. It is, therefore, considered necessary that high standards are set in the area of financial sustainability. Managing of savings account with local branch is another important area in financial management. All cash collections made at a meeting may be deposited into the bank and withdrawals made for disbursing the loans. While members could take turns for depositing the cash into bank, the persons authorized and the borrower concerned could draw the money from bank. However, groups maintaining up to date records could consider extending loans out of pooled fund during the meetings itself. Periodic reconciliation of accounts with bank transactions is considered useful.

1.4.7 Record Maintenance

Record keeping is possibly the most crucial function in a self-help group often confined to the periphery. An efficient record keeping assumes significance for promoting transparency in the system considering the need for providing safety of micro-deposits pooled in savings and credit programmes. An effective information system that supports their self-management efforts is sine-quo-non for sustainability of self-help groups. Such system can be considered effective when it is easily understood and appeals to cognitive abilities of ignorant and illiterate community. Besides, it must be credible, verifiable and facilitate quick recall of stored information in the perception of users.

1.4.8 Group Dynamics

The forces that result from the interactions of group members are often referred to as group dynamics. Group dynamics influences the behavior of both individual group member and the group as a whole. A thorough understanding of group dynamics is useful for practicing effectively with any type of group. Although many theories have been developed to conceptualize group functioning, fundamental to all of them is an understanding of groups as social systems. A system is made up of elements and their interactions. As social systems, therefore, task and treatment groups can be conceptualized as individuals in interaction with each other. In-depth knowledge of group dynamics is essential for understanding the social structure of groups and for developing beginning-level skills in group work practice.

1.4.9 Conflict Resolution

Conflicts are natural to social life. People have different personalities, family backgrounds, life experiences, attitudes and interests. These lead to disagreements and disputes and, if they are not solved amicably will lead to conflicts. Usually in almost all social groups, conflicts arise out of sub group formation due to several reasons. If appropriate action is taken in time, the minor conflicts can be resolved easily. SHGs are no exemption in this regard. According to social work theory, the principles of group dynamism explain various stages of group functioning. Sub group formation might adversely affect the performance of the group. Timely intervention by the group leader revives the group dynamism and enables the group to achieve the objectives. In the case of SHGs, the involvement and the support of members especially during the initial stages are very crucial for the smooth functioning of the SHGs.

1.4.10 Capacity Building

Capacity building enhances the ability and skills of the SHG members at the individual level to realize her full potential and live a more happy and meaningful life. This is an enabling and empowering process to work as a group and play different roles, necessary for development and maintenance of the group. It is important from the point of view of empowerment that women are not only capable of functioning as a group, but also are able to effectively participate in the process of economic activity undertaken by the group of women. Capacity building of women in the areas of planning, executing, and monitoring and all aspects of the economic activity is equally desired in this context.

1.4.11 Relationship with stakeholders

The members of self-help groups must possess a good amount of knowledge about establishing relationships/linkages with other social institutions around them. The major objectives of this aspect of relationship building is to exchange information freely, to get access to resources and facilities, to develop the required infrastructure, to benefit from Government schemes for which women are eligible, but may be currently deprived of due to the absence of linkages and to lessen exploitation through collective strength.

II. OBJECTIVES OF THE STUDY

1. To explore the important Management traits influencing women empowerment in the self help groups.
2. To offer suggestions for effective functioning of self help groups in the study area.

III. REVIEW OF LITERATURE

1. **Adela Kazmi and Sharma (2014)** in their study on “Literature review of behavioral themes on women in management” have identified five broad behavioral themes in the literature. These are: attitudes, communication, leadership, motivational pattern and personality traits. According to the authors all these behavioral themes have contributed to successful management of tasks by women.
2. The study of **Palani and Sevaraj (2008)** analyzes that empowerment is a process of increasing awareness and capacity building, leading to greater participation in socio-political processes, acquiring greater decision-making power and association with transformative action. Empowerment of women refers to a conscious process, through which women are adequately sensitized to the happenings around, gain control over resources, raise their levels of participation in decision making, especially political processes, enhance their financial capabilities and realize their best selves. The concept of empowerment is defined as the process by which women can take control and ownership of their choices. It means providing women with greater access to financial resources inside and outside the household, minimizing the intensity and levels of their vulnerability, especially poverty and enabling them to exercise their rights in a free environment.
3. **Raja ram (2000)** has made a research on participatory monitoring for Self-Help Groups as a tool for sustainability. He looks at how monitoring systems may be put in place for SHGs under a women’s empowerment programme like the Mahalir Thittam. He stresses the need to institutionalize the system of self-monitoring by building capacity within SHGs of Federations and looks at self or participative monitoring as a cornerstone for sustainability.
4. **Grahalakshmi and Palaneeswari (2013)** on their title “Mahalir Thittam – a bank linkage program to empower women through self help groups” have studied the impact of Mahalir Thittam program on women empowerment in Virudhunagar Dt. The authors have analyzed the performance of “College Bazaars” organized by NGOs under the scheme to create new market for the produces of SHG women. The study concluded that

the program has resulted in increase in savings and improved repayment of loans in time which led to the members' economic empowerment.

5. **Tanmoyee Banerjee Chatterjee, (2012)** stated that Self-employment held the key to continuity of employment. Self-employed members of self-help groups (SHGs) fare better than their wage-earning counterparts when it came to continuity of employment. The study dwelt on the factors influencing the different indicators of women empowerment among the members of 26 matured all-woman SHGs. It also isolated the socioeconomic demographic factors influenced the joint probability of a group member being both empowered and employed. The study concluded that training significantly influenced various dimensions of empowerment, and the trained group members were more likely to be both empowered as well as employed.

IV. METHODOLOGY

4.1 Sampling design and Statistical Tools

The researchers have used systematic random sampling technique of Probability sampling. From the Total SHGs in the study area every fifth member was selected from the study area. The sample size is restricted to 400 members. The data collected were analyzed with the aid of Statistical Package for Social Sciences (SPSS). The data were tested for normality to ensure that it represents the true population and to avert any skewness in the data. The multivariate technique – Factor Analysis was used to reduce the number of variables/impact into few so that the impact can be analyzed with and in the presence of other variables with the aid of statistical tools. The statistical tool which is used in this study is inferential statistics. The researchers have used structural equation modeling technique. In this study, SEM using confirmatory factor analysis is applied to study the impact of management traits on self help group women empowerment.

The Primary data was collected from the sample respondents using a Structured Interview Schedule. The secondary data have been collected from the brochures and records of Mahalir Thittam in Madurai District, various magazines, websites, books, National and International journals and dailies.

4.1.1 Structural Equation Modeling

- Structural Equation Modeling (SEM) is “a collection of statistical techniques that allow a set of relationships between one or more independent variables, either continuous or discrete, and one or more dependent variables, either continuous or discrete, to be examined” (Tabachnick and Fidell, 2001, p.653). SEM has become an important tool for analysis that is widely used in academic research (Heise, 1975; Bentler, 1980; Anderson and Gerbing, 1982; Anderson and Gerbing, 1988; Bollen, 1989; Breckler, 1990; Byrne, 2001; Hair et al., 1995; Jöreskog and Sörbom, 1996; Schumacker and Lomax, 1996; Kline, 2005; Homles-Smith et al., 2006).
- The primary purpose of SEM is to explain the pattern of a series of interrelated dependence relationships simultaneously between a set of latent or unobserved constructs, each measured by one or more observed variable (Hair et al., 1995; Schumacker and

Lomax, 1996). SEM is based on the assumption of causal relationships where a change in one variable (x_1) is supposed to result in a change in another variable (y_1), in which y_1 affects x_1 . Not only does SEM aim to analyze latent constructs, in particular the analysis of causal links between latent constructs, but also it is efficient for other types of analyses including estimating variance and covariance, test hypotheses, conventional linear regression, and confirmatory factor analysis (Jöreskog and Sörbom, 1996).

- According to Anderson and Gerbing (1988, p. 411), SEM is a confirmatory method providing “a comprehensive means for assessing and modifying theoretical models”. Therefore, researchers in social science research have found SEM to be an appropriate technique to examine their hypothesized models (see Crocby et al., 1990; Smith, 1998; De Wulf et al., 2001; Lin et al., 2003; Roberts et al., 2003; Liang and Wang, 2005; Palmatier et al., 2006; Wang et al., 2006).
- SEM also has the ability to assess the unidimensionality, and reliability and validity of each individual construct (Anderson and Gerbing, 1988; Bollen, 1989; Hair et al., 1995; Kline, 1998, Kline, 2005). Further, it provides an overall test of model fit and individual parameter estimate tests simultaneously, thus, providing the best model fits to the data adequately. In this study, SEM using confirmatory factor analysis, therefore, has been conducted.
- Arbuckle's (2005) structural equation modeling software AMOS 20 (Analysis of Moment Structures) was used to explore statistical relationships among the items of each factor and between the factors of independent (i.e., Management Traits), and dependent variables (i.e., Family empowerment, Economic empowerment and Social empowerment). Further, the researcher can specify, estimate, assess, and present the model in a causal path diagram to show hypothesized relationships among variables. The empirical model can be tested against the hypothesized model for goodness of fit. Any causal paths that do not fit with the original model can be modified or removed.
- Once all constructs in the measurement model (stage one) were validated and satisfactory fit achieved (Anderson and Gerbing, 1988; Hair et al., 1995; Kline, 2005; Homles-Smith et al., 2006), a structural model can then be tested and presented as a second and main stage of the analysis. The structural model has been defined as “the portion of the model that specifies how the latent variables are related to each other” (Arbuckle, 2005, p.90). The structural model aims to specify which latent constructs directly or indirectly influence the values of other latent constructs in the model (Byrne, 1989).
- Hence, the purpose of the structural model in this thesis is to test the underlying hypotheses in order to answer the research questions outlined in previous chapters. The hypotheses were represented in thirty causal paths to determine the relationships between the constructs under consideration. In the proposed theoretical model discussed in previous chapters, the underlying constructs were classified into two classes, including exogenous constructs and endogenous constructs.
- To evaluate the structural model, goodness-of-fit indices are examined to assess if the hypothesized structural model fits the data. If it did not fit, the requirement was to

respecify the model until one was achieved that exhibited both acceptable statistical fit and indicated a theoretically meaningful representation of the observed data (Anderson and Gerbing, 1988; Hair et al., 1995, Tabachnick and Fidell, 2001; Kline, 2005).

- Because the assumptions underlying structural equation modeling were met, the coefficient parameter estimates were examined along with the overall model fit indices to test hypotheses. Parameter estimates are fundamental to SEM analysis because they are used to generate the estimated population covariance matrix for the model (Tabachnick and Fidell, 2001). Coefficients' values are obtained by dividing the variance estimate by its Standard Error (S.E). That is, when the Critical Ratio (C.R.) (called t-value in Tables) is greater than 1.96 for a regression weight (or standardized estimates), the parameter is statistically significant at the 0.05 levels.
- In the path diagram shown in Figures, the values for the paths connecting constructs with a single-headed arrow represent standardized regression beta weights. As in the measurement model, the values appearing on the edge of the boxes are variance estimates in which the amount of variance in the observed variables is explained by latent variables or factors, and values next to the double headed arrows show correlations. The evaluation of the structural model of this thesis is discussed below. Endogenous construct (Family empowerment, Economic empowerment and Social empowerment) have at least one single-headed arrow leading to them. Straight arrows (or single arrow) indicate causal relationships or paths, whilst the absence of arrows linking constructs implies that no causal relationship terms (e) represent random error due to measurement of the constructs they indicate.

V. RELATIONSHIPS BETWEEN MANAGEMENT TRAITS AND EMPOWERMENT DIMENSIONS

In the present study, management traits influencing the three dimensions of women empowerment have been assessed by using the structural equation modelling (SEM) through AMOS 20. The relationships between independent and dependent dimensions were analyzed using the summated scales of each dimension. All the variables were examined for outliers and other departures from non-normality. No significant outliers were detected. The obtained sample size appeared adequate to test a simultaneous structural model (Hair et al., 2005). As the first step in testing the proposed model, goodness-of-fit indices were estimated (Table 1). Bentler and Bonnett (1980) suggest the Chi-square/Degrees-of-freedom (CMIN/DF) ratio as an appropriate measure of model fit, which should not exceed 5 (Bentler 1989). Also additional goodness-of-fit indices, including Chi-square (CMIN), Degrees-of-Freedom (df), Chi-square/Degrees-of-freedom (CMIN/DF), Root mean square error of approximate (RMSEA), Goodness-of-fit (GFI), NFI (Normed Fit Index) and Comparative fit index (CFI). In general, GFI and CFI greater than 0.90 indicate good model fit (Bentler 1989). The goodness-of-fit indices of the proposed model fit the data reasonably well, as confirmed by the chi-square CMIN=12.850, df=3, CMIN/DF=4.283, GFI=0.995, CFI=0.942, NFI = .948, IFI = .960 and RMSEA=0.078 (Table 4.1). All indices

indicated the robustness of the overall model, with the GFI, CFI, NFI, and AGFI well exceeding 0.9, and the RMSEA is close to 0.05. However, the statistically significant chi-square (p-value) was expected, due to its sensitivity to large sample size (Bagozzi, Yi, & Phillips 1991).

Table 1: Goodness-of-fit Indices for Structural Model

Fit Indices	Accepted Value	Model Value
Absolute Fit Measures		
χ^2 (Chi-square) - CMIN	NA	12.850
df (Degrees of Freedom)	NA	3
Chi-square/df (χ^2/df)	Chi square/ df ≤ 5 (Bentler and Bonnett, 1989)	4.283
GFI (Goodness of Fit Index)	≥ 0.90 (the higher the better) (Hair et al., 2006)	.995
RMSEA (Root Mean Square Error of Approximation)	< 0.08 (Hair et al., 2006)	.078
Incremental Fit Measures		
AGFI (Adjusted Goodness of Fit Index)	> 0.80	.852
NFI (Normed Fit Index)	≥ 0.90 (Hair et al., 2006)	.948
CFI (Comparative Fit Index)	≥ 0.90 (Hair et al., 2006)	.942
IFI (Incremental Fit Index)	≥ 0.90 (Hair et al., 2006)	.960

The strength of relationships between, ten management traits and the three women empowerment dimensions has been portrayed in Figure1 and the results are shown in below Table 4.2.

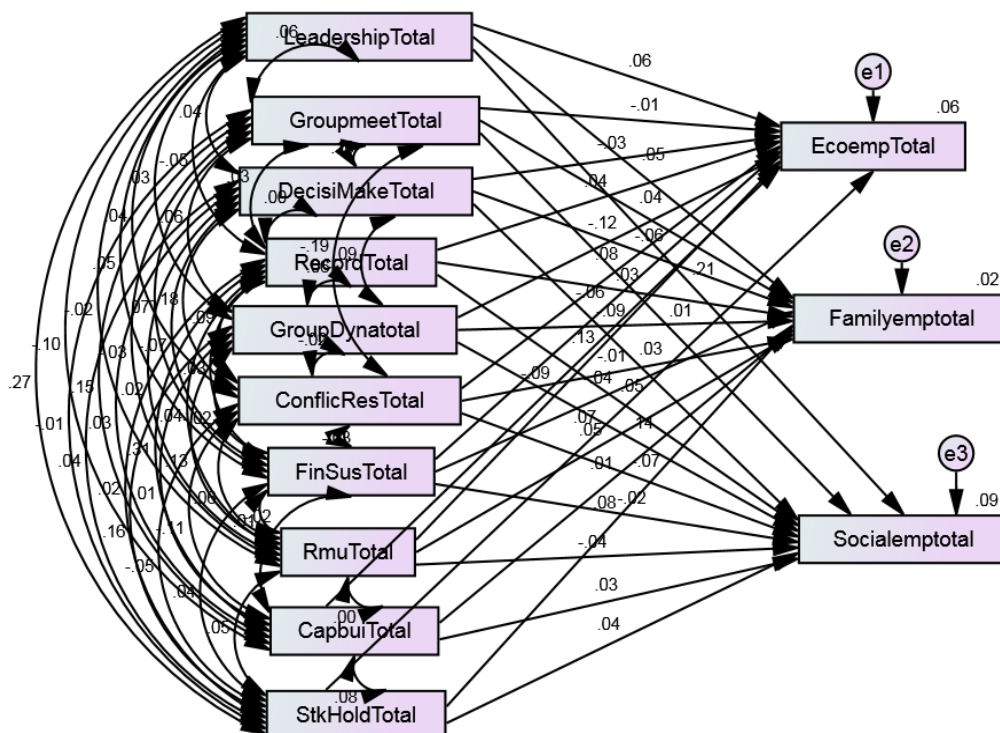


Figure 1: The Result of Proposed Research Model (Standardized Path Coefficients)

VI. FINDINGS

- Figure 1.1 portrays the thirty causal relationships. These relationships are between Relationship with stake holders , Capacity building , Resource mobilization , Financial sustainability , Conflict resolution , Group dynamics , Record Maintenance , Decision Making , Group meeting , Leadership and the three empowerment dimension , social empowerment , economic empowerment and family empowerment.
- Exploration of the factor-wise influence of all the ten management traits on the three women empowerment dimensions revealed that Group Dynamics ($\beta = .138$) and Leadership ($\beta = .208$) significantly influences Social empowerment. All the other independent factors do not show a significant relationship with Social Empowerment.
- Leadership ($\beta = .208$) is the strongest predictor of economic empowerment followed by group dynamics ($B = 0.138$). The analysis revealed that ten management traits do not show a significant relationship with the women empowerment dimension Family Empowerment.
- Exploration of the factor-wise influence of all the ten management traits on the women empowerment dimension “Economic empowerment” revealed that Group Dynamics ($\beta = .116$) and Resource mobilization and utilization ($\beta = .131$) significantly influences Economic empowerment. All the other independent factors do not show a significant relationship with Economic Empowerment. Resource mobilization and utilization ($\beta = .131$) is the strongest predictor of economic empowerment followed by group dynamics ($B = 0.116$).

VII. SUGGESTIONS & CONCLUSION

The SHG women should be helped to get into non traditional activities through the provision of credit facilities and managerial skill development programs. But the government policies and programs neither creat specific opportunities nor have specific programs for developing their management competencies which constructively contribute for women empowerment. For empowerment of women, intervention should be a continuous process with intervention at a steady pace rather than with target oriented intensive efforts at sporadic intervals. It is found in the study that SHG movement helps not only in addressing economic issues but also it is effective in addressing social and gender issues. The socialization process of SHGs has brought tremendous improvement in their attitude and behavior which is considered to be the basic requirement for women empowerment. Hence to this extent SHG has contributed to women empowerment.

VIII. REFERENCES

- [1] Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organisation research. *Administrative Science Quarterly*, 36(3), 421_458.
- [2] Bentler, P. M., & Bonnet, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588_606.
- [3] Anderson, J. C. and D. W. Gerbing: 1988, ‘Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach’, *Psychological Bulletin* 103(3), 411–423.

- [4] Tabachnick, B.G., & Fidell, L.S. (2001). *Using multivariate statistics*. (4th edn.). Boston: Allyn & Bacon.
- [5] Adela Kazmi and P K Sharma *Journal of Contemporary Research in Management*, ISSN 0973-9785, 01/2014, Volume 9, Issue 1, p. 35
- [6] E.Palani and Dr.V.M.Selvaraj (2008), "Socio-economic Empowerment of Women through Self-Help Groups", *Indian Coopertive Review*, January, pp.210-217.
- [7] Rajaram, Tamil Nadu Corporation for Development of Women Ltd. Participation, <http://www.gdrc.org/icm/nand-5.html>. 2000.
- [8] Mrs.S.Grahalakshmi and Dr.T.Palaneeswari, *International journal of Scientific research-Vol: 2 /Issue: 3/March 2013*. ISSN 2277-8179 p.27
- [9] Tanmoyee Banerjee (Chatterjee), C. G. (2012). What Factors Play a Role in Empowering Women? A Study of SHG Members from India. *Gender technology and development*, 16 (3), 329-355

For Citation

Praba, K., Shanmugam, K. (2016) :: "A Study On Impact Of Management Traits Of Self Help Group Members On Women Empowerment In Madurai District"
International Journal of Informative & Futuristic Research (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5962-5974, Paper ID: IJIFR/V4/E4/057.

REVIEW ON PROVIDING SECURITY TO DATA STORED ON HDFS USING SECURITY PROTOCOL

Paper ID

IJIFR/V4/ E4/ 065

Page No.

5975-5981

Subject Area

Computer Engineering

Key Words

Data Secure Storage, Data Access Control, Hadoop, Isolation, Inter-Cloud Data Migration, Cloud Storage

1 st	Poonam R. Wagh	M.Tech. Student Department of Computer Engineering, SITRC, Nashik, Maharashtra
2 nd	Amol D. Potgantwar	Professor & HOD Department of Computer Engineering, SITRC, Nashik, Maharashtra

Abstract

In today's era, different organizations and individuals tend to outsource their data to cloud storage, the security and user privacy protection attract more attention. A novel model of cloud secure storage is proposed, which combines the Hadoop distributed file system (HDFS) with symmetric and public-key cryptography. The model uses the HDFS as the storage platform and the XML format as the logical storage structure. Hadoop uses Kerberos principals and key tabs for user authentication. It also briefly describes how Hadoop uses delegation tokens to authenticate jobs at execution time, to avoid overwhelming the KDC with authentication requests for each job. Kerberos assigns tickets to Kerberos principals to enable them to access Kerberos-secured Hadoop services. Paper contains the all the survey details regarding the security issues on data isolation, intra-cloud data migration and inter-cloud data migration under the environment of a Private Storage Cloud extended with a Partner/Public Cloud. A security encryption schemes based on Hadoop which satisfy the data transmission and storage security and satisfy the server executes digital signature for client data at the same time. It is a distributed encryption system that could reduce the burden on the server, and finally achieve security, stability, efficient and effective storage.

I. INTRODUCTION

Nowadays data which is being collected and processed is extremely large, Big data is extremely large data sets that are analysed and converted into different patterns, trends, and associations. There are three types in big data structured, semi structured and unstructured. Big data technologies are important in providing accurate analysis. Big data faces many challenges like capturing data, curation storage, searching, sharing, analysis and security.

Big data analytics is often associated with cloud computing because the analysis of large data sets in real-time needs a platform like Hadoop to store large data sets across a distributed cluster and MapReduce to coordinate, combine and process data from multiple sources. Cloud computing is extremely popular and highly used computing paradigm, it provides the users massive computing, storage, and software resources on demand [1].

Hadoop is a Distributed framework for analysing big data [2]. It is a platform for structuring Big Data, which solves the problem of formatting it for subsequent analytics purposes. Hadoop has a distributed computing architecture with multiple servers, making it extremely inexpensive to scale and support extremely large data stores. DFS mainly consists of NameNode, DataNode, Job tracker and task tracker [3]. Owen O'Malley et al. designed the Kerberos protocol based on SSL to launch user identity authentication [4]; Indrajit Roy et al. designed and implemented the Airavat platform, which could ensure the vital data secure and privacy protection in the MapReduce calculation process [5]. Hadoop distributed file system is based on the Map Reduce processing technique. MapReduce is a processing technique model for distributed computing based on java [6]. There are two important tasks in it, namely Map and Reduce. Map takes a set of data and converts that into another set of data, the files are split into the lines. Reduce task, takes the output from a map as an input and combines those data rows into a smaller set of rows. As the sequence of the name Map Reduce, the reduce task is always performed after the map job. MapReduce has a major advantage that it is easy to scale data processing over multiple computing nodes. These are data processing primitives, called Mappers and reducers. The core concept is processing speed across large data sets. Breaking large data sets into small pieces, distributing them to as much storage/processing units as possible, and processing data, such that processing and data are tightly coupled with the resulting output being aggregated are the key feature to achieving the goal of speed. A framework of SecureMR has been proposed by Wei Wei et al. to guarantee the data and service integrity [7]. In fact, the research works they have done were mostly aimed at providing the users authentication to identify and to ensure the security as well as privacy protection.

In Hadoop Distributed File systems (HDFS) there is no attempt to verify the identity and group membership of users who interact with (HDFS) and logged in users store data in the Hadoop in a browser without any additional storage media, and the user can obtain the data wherever they are by computers, laptops, mobile phones. It is not having effective security for the confidential data which is not access to unauthorized user. Kerberos protocol messages are protected against eaves dropping and replay attacks. It builds on symmetric key cryptography and requires a trusted third party, and optionally may use public-key

cryptography during some phases of authentication [7]. In Hadoop, Kerberos authentication is used but authentication is not very effective for securing confidential data on Hadoop [8]. Below are the current issues on the HDFS Security

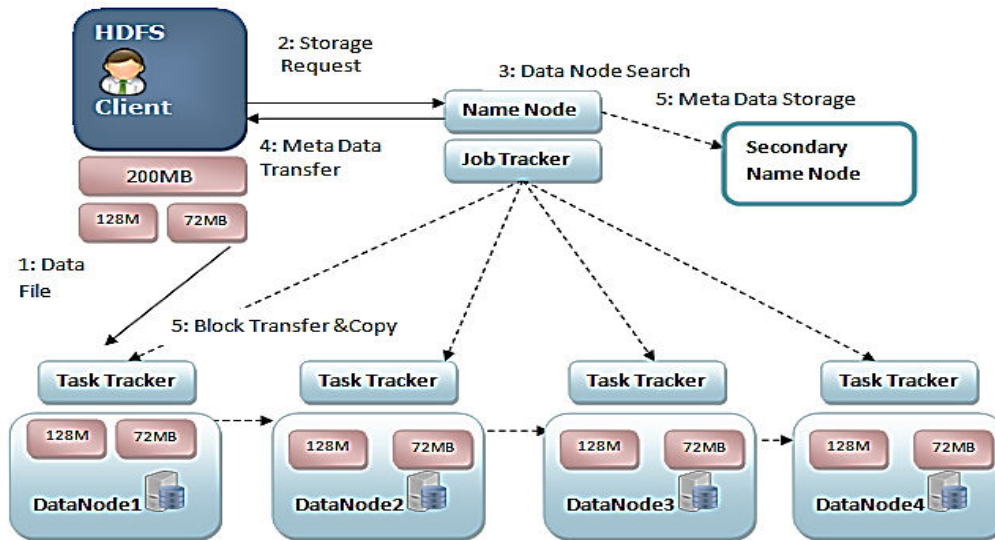


Figure 1: Hadoop Cluster

- 1) **Transmission security:** While transmitting data it may be intercepted, but the data transmission is not working with the strong encryption protection measures.
- 2) **Access control:** Authorised access control is weak the user data stored in the clouds without setting access authority.
- 3) **Data storage:** Data stored on the cloud is not classified hence data leakage is possible
- 4) **Data verification:** Data verification is not strong as it cannot be verified if the right person is accessing the data.

To solve the existing security problems, cloud disk storage based on Hadoop is proposed, the program draw lessons from a security protocols like Kerberos' authorization process. The classic algorithms such as AES, RSA, blowfish for realizing encryption, and authentication are utilized, and time is checked to inspect if it can complete the encryption and transmission in an acceptable period.

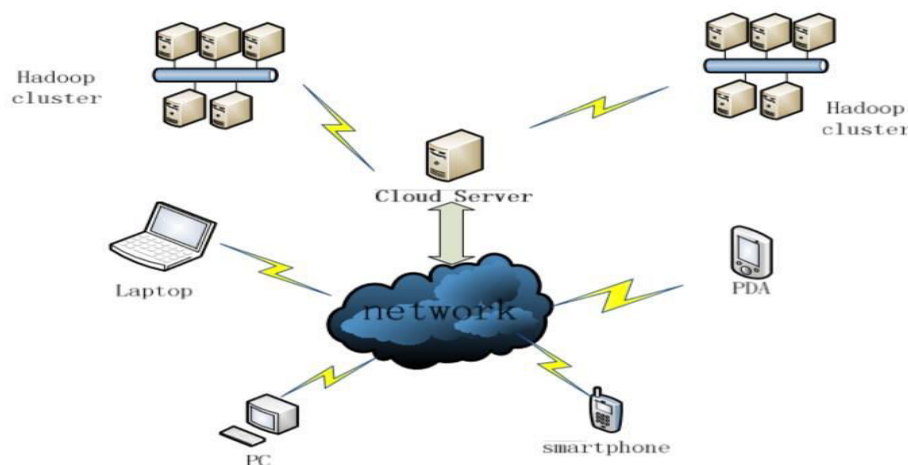


Figure 2: Cloud Cluster

II. SURVEY REVIEW

Network essentials and applications are proposed by Stallings [9]. Hadoop eco system for big data security is proposed by pradeep adluru [10]. David Nuñez, Isaac Agudo proposed Cryptographically Enforced accessed control system, Encryption and decryption on data at job tracker which faces performance issue [11]. There is Implementation of SEHadoop model which has delegation token limited performance impact [12]. Certificate and timestamp are checked before login and TSA and directory to verify on server by secure cloud management method [13]. There is a solution proposed by yan Wen for Hadoop but it faces security in terms of efficiency [14]. Data at rest security is proposed for Hadoop security threats this system uses tuning for hdfs [15]. Auth hacker and perimeter evesdropper is used by Sharif, Sarah Cooney [16]. Spark uses HDFS security system and analysis for spark cloud computing security is done using static security analysis [17]. One solution provided in combination with Kerberos for authentication and single sign on (SSO) to make the system secure [18]. Many security and privacy issues are discussed by Ibrahim Lahmer, Ning Zhang [19]. The RSA digital signature algorithm and its mathematics are used and proved [20]. Large and integrated integer library is built by using C++ and the implementations of Miller-Rabin. Hong Bo Zhou explained cloud computing its applications and standards [21]. There is Hatman intra cloud trust management system in which the first full-scale, reputation-based, trust management system is implemented. By comparing job replica outputs for consistency, Hatman dynamically assesses node integrity [22]. BANLOGIC is implemented by distributing encryption system to reduce burden on the system to achieve security and stability [23].

XU Guang-hui, in his research mentioned, Hadoop as an Apache open source project consisting of several projects like HDFS, MapRedcue, HBase, Hive, ZooKeeper and others [24]. Further to his findings it was concluded that HDFS and MapReduce being vital parts of the open source. According to ZHUO Tang, in his findings aimed at Algorithm for MapReduce; MapReduce had aimed at paralleling and dealing with tasks on a much larger scale. Paralleling & Distributed Processes had eventually made MapReduce scheduler become particularly more important [25].

Ghemawat S. also stated that Hadoop lacked serious safety measures making it vulnerable to data leakages. To overcome such vulnerabilities Ghemawat S. integrated Kerberos in Hadoop in the year 2009 with the help of Yahoo. Researchers of Kerberos suggested its implementation by only authorizing the access to users. According to the researchers users of Kerberos had to obtain access from third party centers which in turn will produce an authorization certificate only after which the users will be allowed access. After the authorised certificate, Hadoop Cluster will sort key issues first depending upon the issue minimizing the risk of user data theft. Many other researchers put their theories in different methods to reduce data leakages caused identification and to increase the security of cloud storage. [27] ZHANG Da-Wei, 2009, a researcher on Hadoop -based enterprise file cloudstorage system proposed that the use of HDFS can be used to build a private enterprise

cloud which can combine Hadoop's fault tolerance and can also be suitable for the Big Data feature.

In addition to building a secure and private enterprise [28] HouQinhua, Wu Yongwei, Zheng Weimin, researched on Protection of User Data Privacy in Cloud Storage Platform. Hou, further evaluated that a System Security Layer (SSL) secure connection and secure virtual machine monitor could enhance the security of user data in cloud storages. Furthermore, YU Shu-cheng [29], encoded the existing cloud data using the attribute encryption scheme (ABE), the work was simple but effective by simply using a public key to decode the same data before even it was uploaded, the use of public key limited the data access the user had. The user had to ensure to use the "K attributes to decrypt the data, in which the K is the number of threshold to decrypt the data". The use of the attribute scheme had ensured the safety and security of the data storage but eventually eliminated the use of public key for each individual user at the server side. YU Shu-cheng[30] scheme of attributes enabled the user attributes to be used as user's public key which also came along with some cons, the data could be decrypted completely when different user attributes would hold their attributes together and get access to all other attributes.

III. SCHEME DESIGN

As per the design view the software module, the system can be divided into client module, server call module, secret key production and distribution module, data encryption module, data signature module, the data transmission module, data authentication module, and data storage module, in which the client module includes the data encryption module, data transmission module, data signature module while the server call module includes the secret key production and distribution module, data authentication module and data storage module. The three times handshake generated between client and server.

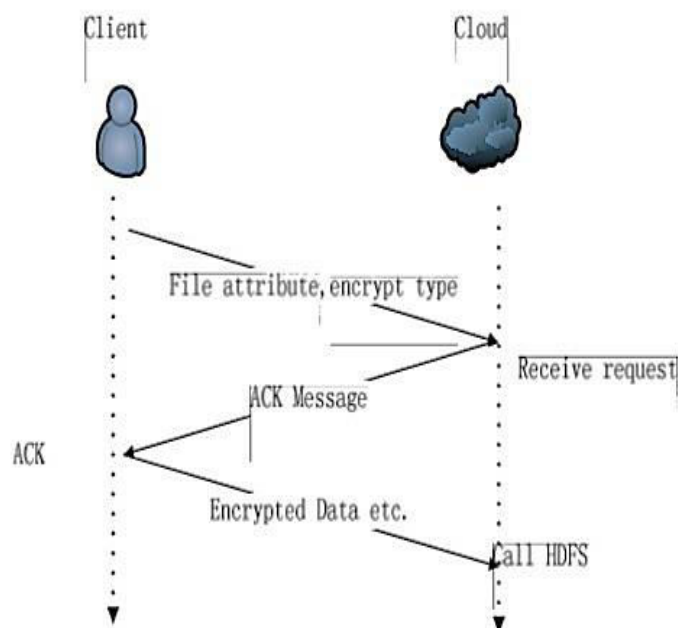


Figure 3: Three Times Handshake

If a user wants to upload file to the server, he should initiate a request first. And if the file is confidential which needs to be encrypted, the client needs a secret key to encrypt the file. Client terminal cannot generate a secret key. The secret key is generated by server and then sent to the client, after which the client will finish data's symmetric encryption and RSA data signature. The transportation and encryption of data need a certain delay. They use asynchronous request to ensure the fluency of user interface when other operations can be carried out normally. Encryption can ensure the security of the data, but at the same time, it will increase the burden on the system. Considering that, not all the files need to be encrypted, such as common archive files, music files, etc. the client must make sure that the file uploaded needs to be encrypted.

IV. CONCLUSION

In this review paper survey is related to security issues on data isolation, intra-cloud data migration and inter-cloud data migration under the environment of a Private Storage Cloud extended with a Partner/Public Cloud. The security solutions based on the HDFS layer, with master/slave architecture, for the PSC are proposed. The performance analysis of them proves the efficiency of the security design.

A security encryption schemes based on Hadoop which satisfy the data transmission and storage security and satisfy the server executes digital signature for client data at the same time. It is a distributed encryption system that could reduce the burden on the server, and finally achieve security, stability, efficient and effective storage. The next research direction is to optimize the I/O efficiency of HDFS and ensure the scheduling security when executing the Map Reduce tasks in Hadoop. Hadoop uses Kerberos principals and key tabs for user authentication.

V. REFERENCES

- [1] BAO Rong-chang. Access Security on Cloud Computing Implemented in Hadoop System[C].Genetic and Evolutionary Computing (ICGEC) 2011.
- [2] QIAN Quan, WANG Tian-hong, ZHANG Rui, XIN Ming-jun ,A Model of Cloud Data Secure Storage Based on HDFS,2013
- [3] Said Aminzou1 I Brahim ER-RAHA 2 I Youness Idrissi Khamlichi3 I Karim Afdel41 Mustapha Machkour Towards a Secure Access to Patient Data in Cloud Computing Environments, 2013
- [4] O'Malley, K. Zhang, S. Radia, et al. Hadoop Security Design. <https://issues.apache.org/jira/secure/attachment/12428537/securitydesign.pdf> Oct. 2009.
- [5] Airavat. <http://www.cs.utexas.edu/~indrajit/airavat.html>, Nov.2010.
- [6] JVM-Bypass for Efficient Hadoop Shuffling, Yandong Wang Cong Xu Xiaobing Li Weikuan Yu,2013
- [7] W. Wei, J. Du, T. Yu, X.HGu. SecureMR: A Service Integrity Assurance Framework for MapReduce.Computer Security Applications Conference, 2009. ACSAC 2009
- [8] Dr. Subatra Acharya, Towards a Trusted Hadoop Storage Platform: Design Considerations of an AES Based Encryption Scheme with TPM Rooted Key, 2013.
- [9] W. Stallings. Network Security Essentials: Applications and Standards. Prentice-Hall Published, 2000.
- [10] Pradeep Adluru, Srikari Sindhoori Datla, Xiaowen Zhang, Hadoop Eco System for Big Data Security and Privacy, 2015.

- [11] David Nuñez, Isaac Agudo, Javier Lopez, Delegated Access for Hadoop Clusters in the Cloud, 2013
- [12] Xianqing Yu, Peng Ning, Mladen A. Vouk, Enhancing Security of Hadoop in a Public Cloud, 2015.
- [13] LIN Wen-hui, LEI Zhen-Ming, LIU Jun, YANG Jie, LIU Fang, HE Gang ,
- [14] [14] Qiaoyan Wen, A New Solution of Data Security Accessing for Hadoop Based on CP-ABE 2014
- [15] Petros Zerfos, Hangu Yeo, Brent D. Paulovicks and Vadim Shein, SDFS: Secure Distributed File System for Data-at-Rest Security for Hadoop-as-a-Service in Current Security Threats and Prevention, 2015
- [16] Measures Relating to Cloud Services, Hadoop Concurrent Processing, and Big Data Ather Sharif, Sarah Cooney, Shengqi Gong, Drew Vitek, 2015
- [17] Gang Zhou *, Dapu Zhao, Kexu Zou, Weida Xu, Xinjie Lv, Qian Wang, Wenjun Yin, The Static Security Analysis in Power System Based on Spark Cloud Computing Platform, 2015.
- [18] Abhijeet Desai, Nagegowda K S, Ninikrishna T , Secure and QoS Aware Architecture for Cloud Using Architecture for Cloud Using Software Defined Networks and Hadoop, 2015.
- [19] Ibrahim Lahmer, Ning Zhang, Survey on Security and Privacy Issues in Big Data MapReduce: A Critical Analysis of Existing Authentication Methods, 2015.
- [20] CAO Ying-yu, An Efficient Implementation of RSA Digital Signature Algorithm, 2008.
- [21] HongBo Zhou. Cloud computing: technology, application , standar, Electronic Industry Press, 2011
- [22] Khan, S.M, and Hamlen, K.W. , “Hatman: Intra-cloud Trust Management for Hadoop”, Proc. 2012 IEEE 5th International Conference on Cloud Computing (CLOUD), Honolulu, HI, June, 2012, pp. 494- 501, doi: 10.1109/CLOUD.2012.64.
- [23] First A. Huang Jing, Second B. LI Renfa, *and Third C. Tang Zhuo, The Research of the Data Security for Cloud Disk Based on the Hadoop Framework, 978-1-4673-6249-8/13/\$31.00, 2013
- [24] XU Guang-hui. Deploying and researching Hadoop in virtual machines [C] // Automation and Logistics (ICAL), 2012 IEEE International Conference on. Zhengzhou, 2012: 395-399.
- [25] ZHUO Tang, ZHOU Jun-qing, LI Ken-li, et al. Contact Administrator; MTSD: A Task Scheduling Algorithm for MapReduce Base on Deadline Constraints [C]. Parallel and Distributed Processing Symposium Work. Shanghai, 2012: 2012-2018.
- [26] Ghemawat S, Gobioff H, Leung S T. The Google file system [C]. Proc of the 19th ACM Symp on Operating Systems Principles. New York: ACM, 2003: 29-43
- [27] ZHANG Da-wei. Research on hadoop-based enterprise file cloud storage system [C]. Awareness Science and Technology (iCAST), 2011 3rd. Dalian, 2011: 434-437.
- [28] Hou Qinhua, Wu Yongwei, Zheng Weimin etc. A Method on Protection of User Data Privacy in Cloud Storage Platform. Journal of Computer Research and Development, 2011, 48 : 1146-1154
- [29] YU Shu-cheng. Contact Administrator; Achieving Secure, Scalable, and Fine-grained Data Access Control in Cloud Computing [C] // INFOCOM, 2010 Proceedings IEEE. San Diego, CA, 2010: 1-9

FOR CITATION

Wagh, R.P. , Potgantwar, D.A. (2016) :: “Review on Providing Security to Data Stored on HDFS Using Security Protocol” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 5975-5981, Paper ID: IJIFR/V4/E4/065.

A PRELIMINARY SURVEY OF KHARIF WEEDS IN AKOLA REGION

Paper ID

IJIFR/V4/ E4/ 052

Page No.

5982-5994

Subject Area

Botany

Key Words

Kharif Crop, Weeds, Cyperus Rotundus, Cynodon Dactylon

1 st	V.S.Patil	Professor Department of Botany Shri Shivaji College of Arts, Commerce & Science, Akola , Maharashtra(India)
2 nd	S. P. Rothe	
3 rd	Shital V. Chavan	

Abstract

Kharif crop or monsoon crop are domesticated plants cultivated and harvested during the rainy season between June to October in India. Rice, Millet, Maize, Mung, Urad, Guar, Pea, Peanut are the common kharif crop. Many weed plant grows in between kharif crop. Weeds are unwanted plants which are responsible for decrease in production of crops per unit area. Most of the weeds are more competitive than crop plants. There is over 30,000 species of weeds round the world. Out of these about 18,000 are known to cause serious losses. They are also the source of allergy and cause various health problem. In the list of world's worst weeds nutsedge (Cyperus rotundus) ranks first and hariali (Cynodon dactylon) is in second position. The weeds have similar morphological characters, life cycle, requirements of soil, water, climatic condition as that of kharif crop.

I. INTRODUCTION

In India the kharif season varies with crops. Kharif starting at the earliest in May and ending in January but is popularly considered to start in June and end in October. Many

weed plant grows in between kharif crop. A weed is a plant considered undesirable in a particular situation, "a plant in the wrong place". Most commonly occurring unwanted plants are not in human-controlled settings, such as farm fields, gardens, lawns, and parks. Many plants that people widely regard as weeds are also intentionally grown in gardens and other cultivated settings. The term is also applied to any plant that grows or reproduces aggressively, or is invasive outside its native habitat. More broadly "weed" occasionally is applied to species outside the plant kingdom, species that can survive in

diverse environments and reproduce quickly; in this sense it has even been applied to humans (Rothe and Deshmukh, 1997).

Weeds are destroyers of crop plants. They complete their life cycle with the crop plants for water, minerals, nutrients and light. Thus there is a struggle for existence between crop plant and weeds. Weeds cause great damage to the crop resulting in a substantial decrease in the yield. This damage cannot be estimated year after year. The land under cultivation in Akola of Vidarbha region is less than that occupied by hill forests and grasslands. The irrigation facilities are very poor. Most of the area cannot be irrigated. Annual rainfall is the only source of the water for the district. The permanent water resources are chiefly the wells and these can hold good amount of water for only 5-6 months (Rothe, 2002). The wet lands around permanent water resources as well as irrigated lands are particularly rich in weed flora especially in Akola town and its adjoining area. The more common among them are enumerated here. Present investigation was carried out during 2015-2016. It is hoped that the list of several weeds short description will be helpful for the identification of these plant.

Akola is a district in the Indian state of Maharashtra. Akola district there are 7 blocks that are divided into two sub divisions for agriculture department as Sub Division. Akola includes 3 blocks as Akola, Barshitakli & Murtizapur & Sub Division Akot includes 4 blocks as Akot, Telhara, Balapur, Patur. The geographical area is 5.42 Lakh. ha.

- | | |
|--|---------------|
| 1) Geographical area | 5.42 Lakh ha. |
| 2) Total area under cultivation | 4.96 Lakh ha. |
| 3) Total average area under Kharip crops | 4.82 Lakh. ha |
| 4) Total average area under Rabi crops | 0.46 Lakh. ha |

Akola region has extremity in climatic situation. It has very cold winter and extreme hot summer. The average rainfall is 660 mm. Agriculture is the main occupation of the people in rural parts of the region. Cotton, Soybean and Jawar are the essential crops grown in the district. Other important crops of the region are Wheat, Sunflower, Peanut, Bajra, Harbara, Tur, Urad and Moong, etc. Most of the crops are dependent on the monsoon which is only 15%.

II. MATERIALS & METHODS

The plant exploration tours were conducted during the monsoon & winter seasons i.e. they were collected in August to November. Data of collected species were noted.

For collection of plant assorted size of polythene bags were used. Each collected specimens of a plant in flowering or fruiting condition were taken into consideration and were given a field number. They were put in a small polythene bag which prevented the leaves from shriveling. All such bags were put in a large and thick polythene bags which has easy to carry in the field. These bags are preferable to traditional vasculum made of metal, which is too heavy and tend to convey heat to the plant within.

In case of trees convenient size of representative specimens were collected. The leaves were carefully checked to avoid insect eaten or fungal infected ones. If the leaves, inflorescence and fruits were too large for the mounting board, they were trimmed suitably.

When a leaf had to be removed for want of space the petiole was left on the specimen itself to show phyllotaxy.

The drying of specimens was done in the conventional method news-paper. The dried specimens identify with the help of local floras.

The dried specimens were arranged on herbarium sheets. After confirming the plants, identification was done with the help of local flora. Identification of plants was done with the help of Cooke's (1901), Hooker's (1872-1898) & Naik's (1998) flora. Afterwards their nomenclature was checked, by using Bentham and Hooker's system of classification.

III. RESULTS AND DISCUSSION

1) *Cocculus hirsutus* (L) Diel.

Family: Menispermaceae

Collected from: Murtizapur

A straggling, scandent shrub, young parts densely hairy, grey; Leaves ovate, oblong, deltoid, apiculate, subcordate, and truncate at the base, softly villous on both surface; Flowers small, dull, green, male flowers in short axillary racemes or panicles, Pedicels slender, bracts minute, subulate, hairy, sepal oblong, ovate, hairy, 3 outside, inner large, petals 6, obovate, emarginated, embracing the filaments at base, smaller than petals of the female flowers, Stamen 5, female flower in axillary clusters, 2 – 3 together rarely recemose, petals thick and fleshy, divided at the apex into two, triangular lobes with swollen bases, stigmas tetrad.

2) *Argemone mexicana* L.

Family: Papaveraceae

Collected from: Borgaon manju

Erect, annual herb, leaves sessile, half amplexicaul; Segments dentate, spiny, very pale, prickles very sharp, yellow; Flowers yellow, solitary terminal, Peduncles prickly outside, horned at the apex, very caduceous, sepal 3, spinous. caducous, green, imbricate in 2-4 merious, more or less. crumpled in aestivation, obovate, cuniform, petals yellow, ovary covered with soft spines, stigmaried; seed globose, blackish brown.

3) *Cleome viscosa* L.

Family: Cleomaceae

Collected from: Murtizapur

Annual, erect herb; stem grooved, densely clothed with glandular and simple hair; Leaves petiolet, Leaflets elliptic, oblong, the terminal large petiole hairy; Flowers yellow, axillary, growing out into lax racemes, pedicels slender, tetrad, hairy, sepals, oblong, lanceolate, glandular, petal oblong; seed brown, black when ripe.

4) *Portulaca oleracea* L.

Family: Portulacaceae

Collected from: Murtizapur

Annual, Succulent prostrate herb; stem reddish, swollen at a nodes quite, glabrous; Leaves fleshy subsessile, alternate, cuneiform, rounded, truncate at the apex, fresh with glistening dots, margin reddish; Flower few together in sessile terminal head, Sepals ovate triangular unequal, obtuse, petals 5, obovate, yellow, Stamen 7 – 12 style 3 – 8 partite; Fruit capsule, ovoid, green with reddish base; seed numerous.

5) *Abutilon indicum* L.

Family: Malvaceae

Collected from: Murtizapur

Erect branched, minutely hoary tomentose; Leaves broadly ovate, petiole long, acute, deflexed; Flower solitary, axillary, Calyx long divided to the middle lobe, ovate, apiculate, Corolla yellow or orange, opening in evening, Staminal tube hairy at the base, filament long, acute point hairy; seed brown to black.

6) *Sida acuta* L.

Family: Malvaceae

Collected from: Murtizapur

Annual or perennial shrubby much branched; branches slender, terete minutely stellately hairy; Leaves long, lanceolate with rounded base, sharply serrate, glabrous on both side, petiole long shorter than stipules, pedicels about 5cm, each axil, shorter or longer than the petiole jointed about the middle; calyx long, lobes acute, corolla nearly twice as long as the calyx, fruit yellow.

7) *Corchorus fascicularis* Lam.

Family: Tiliaceae

Collected from: Murtizapur

Annual or Branched from the base; stem and branches terete, glabrous; Leaves elliptic, serrate, lower part produced filiform appendages, glabrous, base rounded, petiole very; Flower cyme, buds obovoid, apiculate, bracts long, linear, apiculate, petal oblong, obovate; Fruit capsule, long; Seed wedge shaped, black, smooth.

8) *Cardiospermum halicabum* L.

Family: Sapindaceae

Collected from: Borgaon Manju

Annual or perennial, Climbing glabrous or pubescent herbs; Leaves deltoid, alternate, petioles long, segments of leaves lanceolate, glabrous, serrate, very acute at the apex and narrow at the base; Flower white, in few flowered umbellate cyme on axillary penduncle, peduncles slender stiff 2 – 10 cm long provided beneath the cymes of with 2 opposite circinate tendrils, pedicels very slender, outer sepal rounded, obovat, usually with a few scattered hairs on the back just below the apical margin, inner sepal larger than the outer rounded membranous petals rounded at the apex, Stamen 8, filaments hairy, style short; Fruit capsule, shortly stalked subglobose, depressed, Pyriform, trigonous.

9) *Alysicarpus rugosus* (Willd.) DC.

Family: Fabaceae

Collected from: Borgaon Manju

Erect annual herb; stem ascending, glabrous except for a decurrent line of hairs; Leaves foliolate, petiole 3 – 4 mm long, stipules scarious 6 – 10 mm long, usually oblong, rarely orbicular, apiculate, glabrous, base often cordate, petioles extremely short, stipule minute, caduceous; Flower in dense spicate racemes, pedicel 3 – 4 mm long, slender glabrous, bracts large chafy, ovate, acuminate glabrous. Calyx glabrous on the back 6 – 9 mm long deeply divides teeth lanceolate much imbricate minutely ciliate, turgid very shortly stalked.

10) *Culin corylifolia* L.

Family: Fabaceae

Collected from: Murtizapur

Erect, annual herb, stem and branches grooved conspicuously gland-dotted and with few appressed hairs; Leaves 1-foliate, petioles long, hairy, gland-dotted, stipules lanceolate, 5-8 long, persistent, Leaflets broadly ovate, lanceolate or elliptic, cuneate or

rounded at the base, inciso-dentate, mucronate at apex, hairy, nigro-punctate on both surfaces; Flower in dense, short, axillary racemes, pedicels very short, Calyx hairy outside, upper teeth linear lanceolate, lower ones ovate, twice as long as the upper, Corolla twice as long as the calyx; Seed solitary, smooth, adhering to the pericarp.

11) *Crotalaria juncea* L.

Family: Fabaceae

Collected from: Murtizapur

Annual herb, branches numerous, ascending slender terete, striate silky, pubescent; Leaves linear or oblong, obtuse, clothed on both side with appressed silky shining hairs, base usually acute, petioles long, stipules very minute; Flower large in erect terminal and axillary lateral, racemes often reaching 1 ft. long, Pedicels long, pubescent bracts beneath the Calyx, minute, linear subulate, Calyx clothed with fulvous hair teeth linear, lanceolate, very deep, corolla bright yellow, slightly exerted, standard ovate, oblong, subacute; Seed 10 – 15.

12) *Desmodium dichotomum* (Wild.) DC.

Family: Fabaceae

Collected from: Murtizapur

Herbaceous, stem stout, annual deeply grooved clothed with long spreading soft hairs; Leaves tri foliolate, petioles 1–2 cm long, deeply hairy, Stipules large, fallacious, amplexicaul auricled leaflets, sub cariateous 2–5 cm, ovate, oblong, elliptic, obtuse, apiculate, hairy on both surface, ciliate with long white hairy; Flower in terminal and axillary racemes reaching 30 cm long, laxly arranged into rachis, pedicel filiform 3 – 6 mm long, bracts long lanceolate acute, ciliate calyx hair, teeth as long tube, Corolla long; Pods straight indented on the both sutures more so on the lower joints 3 – 6 rounded on both edges or broad as long, clothed with hooked hair.

13) *Goniogyna hirta* (Wild.) Ali.

Family: Fabaceae

Collected from: Borgaon Manju

A prostrate much branch herb, branches sometimes long hairy; Leaves numerous, simple, subsessile, ovate, sub acute, hairy on both surfaces, obliquely cordate at the base; Flower in the axil of most of the leaves, Solitary, Subsessile, Calyx segmented, acute, Corolla yellow; Pods silky, long surrounded at the base by the persistent calyx and tipped by the style, smooth or slightly hairy, flattened pale brown, 1 – 2 seeded.

14) *Indigofera cassioides* DC.

Family: Fabaceae

Collected from: Borgaon Manju

Perennial herb; woody, taproot; young stem green, yellowish; Leaves pinnate, stipules, triangular, leaflets alternate, stipulate absent, bracts triangular; Flower pink to orange red, sometimes white; Pod descending, terete yellowish and brown, strigose to glabrescent, hairs spurs.

15) *Indigofera cordifolia* Roth.

Family: Fabaceae

Collected from: Washemba

A diffuse copiously branched, clothed with long white hair, stem tall, the young ones pubescent, the older nearly glabrous; Leaves simple, subsessile broadly ovate, cordate, subobtusely mucronate, hairy on both sides, very densely below, stipules minute setaceous;

Flower yellow, subsessile 4 – 8 flower head, Calyx 3 mm long, outside tube very short, teeth linear, acute, very hairy, corolla bright red not exerted standard; Pods cylindrical, oblong, straight; Seed 2, yellow.

16) *Indigofera glandulosa* Wild.

Family: Fabaceae

Collected from: Murtizapur

Annual, tall, much branched, long slender, Clothed with spreading hairs when young not at all argent co canscent; Leaves trifoliolate, petiole long, Slender, hairy, stipules setaceous minute, Leaflets oblanceolate, hairs above glaucous, appressely hairy; Flower in short axillary, Sessile heads 8 – 9 mm long, Calyx long, hairy outside, teeth, long setaceous, Corolla 2 – 3 time as long as the Calyx; Pods 5 mm long, pubescent angled, the angled slightly winged and often toothed; Seed 2, 3 spherical, smooth and polished.

17) *Lathyrus odoratus* L.

Family: Fabaceae

Collected from: Borgaon Manju

Annual climbing plant, Leaves pinnate with two leaflets and terminal tendril which twines around supporting plant and structures; Flower purple, broad, they are layer and very variable in colour in the many cultivars.

18) *Medicago sativa* L.

Family: Fabaceae

Collected from: Borgaon Manju

Erect annual herb; leaves trifolioate, petioles long, stipules lanceolate Leaflets obovate, cuneate, slightly toothed; Flowers purple yellow, in terminate racemes 6 – 12 mm long, closely 2 – 6 flower, pedicels short than the tube corolla twice as long as the calyx ; Pod form a double spiral, Seed 4 – 8.

19) *Stylosanthes fruticosa* Retz.

Family: Fabaceae

Collected from: Murtizapur

Procumbent herbs or under shrubs; root stock; Stem woody, peduncles and pedicels loosely villous; Leaves 3 – folialate, leaflets oblong to elliptic, linear or lanceolate, acute at base, apex mucronate at tip, pubescent on both side, ciliate on margins; nerves parallel and close, stipules long; Flower yellow, 3–5 in terminal, petals yellows, stamen monadelphous, style filiform.

20) *Tephrosia hirta* L.

Family: Fabaceae

Collected from: Murtizapur

Much branched annual or perennial herbs or sub-shrubs; branchlets densely pubescent with white appressed hair; Leaves imparipinnate, leaflet obovate or oblanceolate, base acute to cuneate, apex obtuse or retuse, Stipules long, subulate; Inflorescence pseudocemose, terminal or leaf opposed; Flower subsessile, bracts linear to deltoid, Calyx lobes filiform, ciliate, petals pink or white; seed dark brown.

21) *Cassia tora* L.

Family: Caesalpinaceae

Collected from: Murtizapur

Annual herb; Leaves long, rachis grooved, more pubescent, with conical glands between each or lowest pair of leaflets, stipules long, linear subulate, codulcous, leaflets 5

pair opposite, obovate, oblong, glaucous, membranous glabrous pubescent base oblique rounded nerved 8–10 pairs petioles; Flowers subsessile pairs in axil of the leaves, pedicel in fruit rarely exceeding 8.1 mm long, Calyx glabrous divided into the base, segment 5 mm long, ovate, acute, petals 5 pale yellow, subequal, obtuse, upper petals 2 lobed the other entire, stamen 10, the upper reduced to minute, staminodes and the remaining 7 perfect; Seed 25 – 30 oblong, smooth, brown.

22) *Lagascea mollis* Cav.

Family: Asteraceae

Collected from: Murtizapur

A tall slender herb; Stem and branched pale, slender, striate, tetrad, pubescent; Leaves ovate, acute or acuminate, crenate, silky beneath and with somewhat coarser hairs above base shortly cuneate, petiole 9 – 25 mm long, densely pubescent, Very silky leaves; Head in clusters, silky villous with an involucre of elliptic acute or acuminate, flowers white peduncles, long slender pubescent. Involucres bracts long, connate for about half way up into a tube lanceolate, very acute, ciliate, corolla tube short, limbs of the segments linear acute, about as long as the tube, pubescent outside near the tip, style arms long, hairy papas a short fabricate.

23) *Parthenium hysterophorus* L.

Family: Asteraceae

Collected from: Borgaon Manju

Erect profusely branched leafy herb; Leaves alternate, pinnatifid, lobes again lobulate or entire or broadly serrate; Head 4 – 5 mm across, white numerous, peduncle in axillary or terminal, lax corymb like cyme.

24) *Tridax procumbens* L.

Family: Asteraceae

Collected from: Borgaon Manju

Procumbent herb, glabrous spreading, long hairy; Leaves opposite, ovate, pinnatifid or deeply incise dentate, acute clothed on both side with hairs from bulbous bases, petioles long densely hairy; Head 10 – 15 mm across, Solitary on long, Slender, Peduncles, Receptacle flat paleaceous, membranous linear, Involucres bracts few seriate, the outer ones ovate, densely hairy, the inner one membranous, oblong, pubescent, ligules central, florets many with tubular 5 lobed, corolla yellow, Anthers bases sagittate with short acute auricles at base; fruit Achenes, oblong.

25) *Vernonia cinerea* L.

Family: Asteraceae

Collected from: Murtizapur

Erect annual herb; Leaves alternate, mostly spatulate; Flower head terminal or auxiliary, homogamous, cymes, Involucres ovoid lobose, Bracts in many series the inner longest, Receptacle naked shortly hairy, corolla all equal, regular, tubular, lobes 5, narrow anthers bases obtuse, style arms subulate hairy, pappus, usually by seriate, densely hairy, often girth with a row outer short hairs, oblong, slightly narrowed at the base clothed with appressed, white hairs.

26) *Convolvulus arvensis* L.

Family: Convolvulaceae

Collected from: Murtizapur

The leaves are spirally arranged, linear to arrowhead-shaped, alternate; Flower trumpet shaped, white or pale pink with five slightly darker pink radial strips, funnel shaped, small bracts; Fruits light brown, two seeded.

27) *Ipomea sinuata* L.

Family: Convolvulaceae

Collected from: Murtizapur

Perennial, vine, twinning, shoots with only cauline leaves and hair with swollen base i.e. postulate, blades glabrous, with cloudy latex; Stem cylindrical, tough, long internodes; Leaves alternate, deep palmately divided with 5 principle lobe, petiolate without stipules; Inflorescences cyme, axillary, bracteates, long peduncles, wiry, pilose, hairy and bumps, bracteates, subtending. Flower pin with conspicuous swelling at base middle sepals with 1 bump corolla, broadly 5 – lobed widely funnel shaped, Cream colored tube, lobe acute at tip white to pinkish, above red, Corolla fusel; Fruit capsule.

28) *Merremia emarginata* L.

Family: Convolvulaceae

Collected from: Murtizapur

Perennial, slender, prostrate, creeping, smooth or somewhat hairy herb; Stem at the node; Leaves small, Kidney shaped to somewhat heart shaped, irregularly toothed; Flower one to three, occurs in short stalk in the axils of leaves. Sepals rounded, weak hair, corolla yellow.

29) *Lantana camara* L.

Family: Verbenaceae

Collected from: Borgaon Manju

A straggling shrub; numerous recurved prickles on the branches, quadranangular, yellowish brown; Leaves opposite, ovate, Crenate, serrate, pubescent above, rounded but suddenly narrowed at the base, petioles 6 – 8 mm long; Flower in dense corymbose, Pedunculate ovoid, head long, yellow colored flower, Peduncles long opposite axils 4 sides slender, hairy thickened, upwards bracts reaching 9 mm long ovate, acuminate, softy hairy on both sides, smaller upwards, calyx long truncate, membranous, very hairy, corolla yellow, drying orange red colour tube hairy outside, style short about 1 mm long.

30) *Hyptis suaveolens* L.

Family: Lamiaceae

Collected from: Borgaon Manju

Annual erects stout, strongly aromatic, viscid pubescent herb; Stem tall; Leaves ovate, rounded or sub cordate at the base, crenate, dentate pubescent on both surface; Flower blue, sessile peduncle cyme in upper axils, calyx fruiting camp adulate and ribbed with 5 aristate teeth, corolla tube cylindric lobes or lip deflexed and saccate, the other erect and spreading flat, stamen 4 didynamous, anther cells confluent.

31) *Ocimum basilicum* L.

Family: Lamiaceae

Collected from: Murtizapur

An erect branching herb, glabrous, pubescent; stem and branches green; leaves ovate, acute entire base cuneate, petiole long; Flower in whorls densely racemose, the terminal raceme usually much longer than the lateral one, bract, stalked, shorter than calyx, ovate, shortly pedicelled, lower lip with 2 central teeth longer than rounded upper lip,

Corolla 8 – 12 mm long, white pink, pubescent, stamen slightly exerted, upper filaments toothed at the base (See Plate VI- A).

32) *Ocimum sanctum* L.

Family: Lamiaceae

Collected from: Borgaon Manju

Subshrubs, much branched; Stem erect, base woody, spreading pilose; Leaf blade oblong, puberulent, glandular, pilose on veins, base cuneate to rounded, margin shallowly undulate, serrate, apex obtuse; Inflorescence Verticillasters, bracts, sessils, cordate, Stamens slightly exerted ,free.

33) *Boerhavia diffusa* L.

Family: Nyctaginaceae

Collected from: Washimba

Herbaceous, diffuse; Root large, fusiform; Stem prostrate, branched, slender, purplish; Leaves at each node in unequal pairs the large 2 cm the smaller 1.2 cm long, both nearly as broad as long or rounded at the apex, green and glabrous above, margin entire, colored pink, petioles nearly long as the blade; Flower very small, shortly stalked, 4 – 10 together in small umbels arranged in slender long stalked, corymbose, axillary and terminal panicle, bracteoles small lanceolate, acute, perianth long, ovary tube long, ovary, glandular viscid, limb funnel shaped dark pink with 5 narrow vertical band outside, stamen 2 slightly exerted.

34) *Achyranthes aspera* L.

Family: Amaranthaceae

Collected from: Washimba

Erect. annual herb; Stem stiff , branches quadrangular; Leaves elliptic rounded at the apex, pubescent on both sides entire; Flower greenish white, numerous, wooly pubescent, rachis elongated, terminal spike, ovate bracteoles, broadly ovate with a spine as long as the blade, glabrous and shining, tepals subequal, ovate pointed with narrow membranous margins, stamen 5, staminodes truncate, fimbriate.

35) *Aerva lanata* Amare (L) Juss ex Schult.

Family: Amaranthaceae

Collected from: Washimba

Annual, branching, somewhat woody root system; Stems mostly straggling , sprawling and spread widely; Leaves alternate, oval, grow from whitish papery stipules with two lobes and red base, tiny clusters of two or three flowers grow in the leaf axils, flower pink, dull white, self – pollinated.

36) *Alternanthera sessilis* L.

Family: Amaranthaceae

Collected from: Murtizapur

A prostrate annual herb; branches many, often rooting from the lower nodes glabrous; Leaves shortly stalked, elliptic denticulate; Flower sessile white, shining arranged in dense small, lanceolate white or pink, ovary broads than long, compressed, utricle broadly obcordate, margin thickened; seed suborbicular.

37) *Amaranthus viridis* L.

Family: Amaranthaceae

Collected from: Borgaon Manju

An annual, herbaceous plant; Stem erect or usually ascending glabrous to pubescent, pubescent especially upwards; Leaves glabrous or pubescent on vein of lower surface,

petioles long; Flower green, unisexual, male and female intermixed, in slender axillary to terminal panicle spikes, Bracts deltoid to lanceolate, ovate; Seed rounded, dark brown to black with a pale thick border.

38) *Celosia argentea* Var.

Family: Amaranthaceae

Collected from: Murtizapur

Erect, annual, glabrous; Branches, grooved; Leaves acute, entire, glabrous base much tapering into a short, petiole; Flower at first pinkish afterwards white, crowded and imbricate in close cylindrical blunt terminal spikes, tepals 5, linear, lanceolate, acute, with 3 close parallel slender, stamen short, filament connate into a cup, style filiform, elongated flowering sometime exerted in fruit; Seed 4 – 8 sub reniform, black.

39) *Acalypha indica* L.

Family: Euphorbiaceae

Collected from: Murtizapur

An annual or perennial herb or shrub; Leaves alternate, undivided, generally petiolate, stipulate, stipules rarely present at the apex, petioles or leaf base, pinnately or palmately veined; Inflorescence, terminal or axillary, usually subtended by a large bract, racemose; Flower develop at each node, Male flower very small, shortly pedicellate, globose in bud, Calyx parted into 4, small, sepals valvate, stamen 4 – 8, unilocular; Female flowers generally sessile or subsessile calyx 3 (4 – 5) small, sepals imbricate.

40) *Euphorbia geniculata* L.

Family: Euphorbiaceae

Collected from: Murtizapur

Annual herb, with branches, glabrous to sparsely pilose; Leaves ovate, margin with minute, distant gland, tipped teeth, both surface especially the lower, stipular, gland purplish; Cyme densely clustered in terminal and axillary cymes, Bracts similar to the leaves but progressively smaller and subsessile; Seed are blackish brown.

41) *Euphorbia hirta* L.

Family: Euphorbiaceae

Collected from: Washemba

Annual erect herb, hispid yellowish crimped hairs; stem usually tetrad branched often four angled; Leaves opposite, oblong, lanceolate dark green above pale beneath, base usually unequal sided, main nerve few distinct, stipules pectinate; Involucres numerous, cyme, gland minute, globose, without a limb; Seed ovoid, trigonous, slightly transversely rugose, light reddish brown.

42) *Phyllanthus madraspatana* L.

Family: Euphorbiaceae

Collected from: Washemba

Erect, much branched, glabrous annual herb; Leaves scattered, glabrous, obovate, subsessile, glaucous; Flower axillary, the male flower minute small cluster subsessile, the female flower larger, solitary, shortly pedicellate, tepals 6, obovate, obtuse, green with white margins, stamen 3, filaments connate, style 3, distinct very small lobes, globose; Seed black.

43) *Aloe barbadensis* Mill.

Family: Asparagaceae

Collected from: Murtizapur

Stemless or very short stemmed succulent plant; Leaves thick, fleshy, green to grey-green, some varieties showing white flecks on their upper and lower stem surfaces, margin serrated, base small, white teeth; Flower producing in summer with yellow tubular corolla.

44) *Commelina haskarlli* L.

Family: Commelinaceae

Collected from: Murtizapur

Annual erect or prostrate, glabrous herb; Leaves narrowly sheath, long base, ciliate, spathes long, axillary, scattered, obovate, cordate at the base with rounded lobes, glabrous, scabrid, peduncles; Flowers in pubescent cymes the upper branch 2 – 4 the lower 1 – 2 flowered.

45) *Cyperus compressus* L.

Family: Cyperaceae

Collected from: Murtizapur

An annual erect, glabrous herb; root fibrous; stem slender, trigonous, with rounded smooth angles; Leaves shorter broad, finely acuminate 1 nerved; Inflorescence, umbel simple often with sessile, when ripe linear, oblong 20 – 40 flowered, rachis stout, angular, closely scarred, scarcely winged, glume imbricate keel produced into slightly recurved, laterally compressed, stigma 3 as long as the style.

46) *Brachiaria mutica* (J.E.Sm) Griseb.

Family: Poaceae

Collected from: Murtizapur

Vigorous, semi-prostrate, perennial grass with creeping stolon which can grow long; Stem have hairy node, leaf sheaths and leaf blades. It rot at the node and detached pieces of the plant will easily take root in moist ground; Flower – head , loose, panicle up to 30 cm long with spreading branches.

47) *Dichanthium aristatum* (poir) C. E. Hubb.

Family: Poaceae

Collected from: Washemba

Perennial with slender stem and varying degrees of stolon development; Young plant prostrate to semi-erect; foliage, becomes erect at maturity, nodes glabrous or short wooly, culms with dense, Short hairs, leaves blades; Inflorescence a sub-digitate, panicle, sometime only one racemes at the end of season or under unfavorable condition, stalks of the racemes hairy.

48) *Digitaria ciliaris* (Retz.)Koel Pescr.

Family: Poaceae

Collected from: Borgaon Manju

Annual herb; Stem slender, branched, base glabrous; Leaves lanceolate, acute, flat with scabrous margins, hairy, smooth, spike few, Rachis slender, triquetrous, narrowly winged; Inflorescence spikelets, acute membranous, the lower floral glume ovate, oblong, acute, the upper floral glumes as long subchartaceous, Stamen.

49) *Dinebra retroflexa* (Vahl) Panz.

Family: Poaceae

Collected from: Borgaon Manju

Annual herb; stem short, slender, erect; Leaves linear, finely acuminate, flaccid, glabrous, contracted at the insertion; Sheath thin, loose, racemosely arranged oblong at the axis of an inflorescence, the lower involve glume shorter than the upper floral glumes reaching 2 cm long, oblong, subacute, white, anther oblong, pale brown.

50) *Heteropogon contortus* L.

Family: Poaceae

Collected from: Borgaon Manju

Annual herb, culms tufted, erect simple or sparingly branched, node glabrous; Leaves mostly at base of culms; Inflorescence raceme, solitary, long terminating culms its branches lower 4 – 6 pairs of spikelets, homogamous, lodicules 2, stamen 3, anthers sessile, spikelets of homogamous pairs like the pedicelled ones, more or less covered with tubercle based hairs.

51) *Rottboellia conchinchinesis* (Lour.) W.D.Clayton.

Family: Poaceae

Collected from: Murtizapur

An annual grass; Stem and leaves covered with stiff, irritating hairs; leaf blades, long, wide, flat, alternate and parallel venation; Inflorescence jointed cylindrical raceme, long; Seed start producing 6 – 7 weeks.

IV. CONCLUSION

In all near about 65 species were collected. Out of 65 species, 51 species remains perfectly preserved without any fungal or bacterial infection. Total 20 numbers of Families were collected. Out of them 16 number of Families were Dicotyledons. In Dicotyledons, 10 Polypetalae, 4 Gamapetalae. 2 Monochlamydeae and 4 monocotyledons families were observed. Plants that are unwanted or undesirable in the desired crop field, competitive, persistent and pernicious, interfere with the utilization of land and resources (Water, Nutrient) and adversely affect human activities. Weeds are destroyers of crop plants. The following harmful effects of Kharif weed are listed below.

- Reduction in crop yield due to weeds result from their multifarious ways of interfering with crop growth and crop culture. Weeds compete their life cycle with crops for one or more plant growth factors such as mineral, nutrients, water, solar energy and space. They are hinder during crop cultivation operation.
- Competition for water: For production of equal amount of dry matter, the weeds, in general transpire more water than most crop plants. It is reported that wild mustard transpires about four times more water than a crop of oat.
- Weeds harm animal health: Several weeds of grasslands and forage crops contain high alkaloids, tannins, oxalates, glucosides, and other substances that prove poisonous to animals when ingested.

From above information we come to conclude that weed shows economic aspects. Weeds are harmful to crops .They are destroyers of crops plant & decrease crop yield. Some weed shows medicinal properties for curing the diseases .They also use as aromatic plant.

V. REFERENCES

- [1] Cooke (1901). "The Flora of the Presidency of Bombay", Vol. I, II, III, London reprinted edition 1958, B.S.I. Calcutta.
- [2] Dhore and Joshi (1988). Flora of Melghat Tiger Reservoir related with Melghat tribal region.

- [3] Hooker J. D. (1872 – 1898). The flora of British India. Vol. I VII, L Reeves and Co., London.
- [4] Naik V. N. (1998). The Flora of Marathwada. Vol I & II, Amrut Prakashan, Aurangabad.
- [5] Rothe S. P. (2002). A Survey of Ornamental Plants from Akola District. *P.D.K. V. Research Journal*, 3: 9 – 14.
- [6] Rothe S. P. and Deshmukh R. G. (1997). Survey of common weeds of Kharif and Rabbi Crop fields from Akola District. *Royal Edu. Soc. Journal.*, 63 – 69.

FOR CITATION

Patil, S.V. , Rothe, P.S. , Chavan, V.S. (2016) :: “A Preliminary Survey Of Kharif Weeds In Akola Region” *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 5982-5994, Paper ID: IJIFR/V4/E4/052.

REVIEW ON EFFICIENT IMPLEMENTATION OF BFS FOR KEPLER GPU ARCHITECTURES

Paper ID

IJIFR/V4/ E4/ 066

Page No.

5995-5999

Subject Area

Computer Engineering

Key Words

GPU (Graphic Processing Unit), Kepler, Parallel Graph Algorithms, BFS, OpenCL

1 st	Suraj S. Mehetre	M.Tech. Student Department of Computer Engineering, SITRC, Nashik, Maharashtra
2 nd	S. M. Walunj	Professor Department of Computer Engineering, SITRC, Nashik, Maharashtra

Abstract

In today's era, fast, scalable, low-cost, and low-power execution of parallel graph algorithms is important for a wide variety of commercial and public sector applications. Breadth First Search (BFS) imposes an extreme burden on memory bandwidth and network communications and has been proposed as a benchmark that may be used to evaluate current and future parallel computers. The first breadth-first search (BFS) algorithm was discovered by Moore while studying the problem of finding paths through mazes. Breadth-first search (BFS) is one of the most common graph traversal algorithms and the building block for a wide range of graph applications. With the advent of graphics processing units (GPUs), several works have been proposed to accelerate graph algorithms and, in particular, BFS on such many-core architectures. Nevertheless, BFS has proven to be an algorithm for which it is hard to obtain better performance from parallelization. Review of the paper finally presents different strategies implemented in BFS-4K to deal with the potential workload imbalance and thread divergence caused by any actual graph non-homogeneity. Finally, an analysis of the most representative BFS implementations for GPUs at the state of the art and their comparison with BFS-4K are reported to underline the efficiency of the proposed solution.

I. INTRODUCTION

Graphs are a common representation in many problem domains, including engineering, finance, medicine, and scientific applications. Breadth-first search (BFS) is a crucial graph traversal algorithm used by many graph-processing applications. Even though very efficient sequential implementations of BFS exist they have work complexity of the order of number of vertices and edges. As a consequence, such sequential implementations become impractical when applied on very large graphs. Recently, graphics processing units (GPUs) have become widespread platforms as they provide massive parallelism at low cost. Parallel executions on GPUs may achieve speedup up to three orders of magnitude with respect to the sequential counterparts on CPUs. Nevertheless, accelerating efficient and optimized sequential algorithms and porting (i.e., parallelizing) their implementation to such many-core architectures is a very challenging task. Several solutions in literature take advantage of the massive parallelism of GPUs but they are often asymptotically less efficient than the fastest CPU implementations. After a certain graph size and, thus, for graph sizes typical of many actual problem domains, the parallel implementations for GPUs become slower than the sequential implementations for CPUs.

II. SURVEY REVIEW

1. P. Harish and P. J. Narayanan [3] proposed the algorithm to accelerate BFS on GPUs, which explores all the graph vertices at each iteration to see whether the vertex belongs to the current frontier. Nevertheless, the proposed way leads to a sensible workload imbalance when the graph is non-homogeneous in terms of vertex degree. The computational complexity of such a solution is $O(V D + E)$. But for large graphs, the proposed algorithm is slower than these quintal version of the algorithm.
2. A partial solution to the problem of workload imbalance has been proposed in [4]. Instead of assigning a thread to a vertex, the authors propose thread groups (which they call virtual warps) to explore the array of vertices. The group size is typically 2, 4, 8, 16, or 32, and the number of blocks is inversely proportional to the virtual warp size. This leads to a limited speedup in case of low degree graphs, since many threads cannot be exploited at the kernel configuration time. Also, the virtual warp size is static and has to be properly set depending on each graph characteristics.
3. Y. Jia et al. [5] and G. Singla et al. [9] present alternative way based on edge parallelism. Instead of assigning one or more threads to a vertex, the thread computation is distributed to edges. As a consequence, the thread divergence is limited and the workload is balanced even with high degree graphs. The main drawback is the overhead introduced by the visit of all graph edges at each level. In many cases, the number of edges is much greater than the number of vertices. In these cases, the parallel work is not sufficient to improve the performance against vertex parallelism.
4. Merrill et al. [11] proposed an algorithm that achieves work complexity of $O(V+E)$. They make use of parallel prefix-scan and three different approaches to deal with the work load imbalance: vertex expansion and edge contraction, edge contraction and vertex

expansion, and hybrid. The algorithm also relies on a technique to reduce redundant work due to duplicate vertices on the frontiers.

5. An efficient BFS implementation with computational complexity $O(V + E)$ is proposed in [10]. The algorithm exploits a single hierarchical queue shared across all thread blocks and an inter-block synchronization [12] to save queue accesses in global memory. Nevertheless, the small frontier size requested to avoid global memory writes and the visit exclusively based on vertex parallelism limit the overall speedup.
6. Yangdong Deng and Wang [20] present an alternative solution based on matrices for sparse graphs. Each frontier propagation is transformed into a matrix vector multiplication. Given the total number of multiplications D (which corresponds to the number of levels), the computational complexity of the algorithm is $O(V + ED)$, where $O(V)$ is spent to initialize the vector, and $O(E)$ is spent for the multiplication at each level. In the worst case, that is, with $D = O(V)$ the algorithm complexity is $O(V^2)$.
7. Vastenhouw and Bisseling introduce a distributed method for parallel sparse-matrix multiplication based on 2D graph partitioning. In 2D graph partitioning, the edges are distributed among the compute nodes by arranging the edges in to blocks using vertex identifier ranges. These blocks are organized into a $p \times p$ grid and mapped onto p^2 virtual processors. Each row in the grid contains all out-edges for a range of vertices.

III. MEMORY MODEL

Work-item(s) executing a kernel have access to four distinct memory regions:

- **Global Memory:** This memory region permits read/write access to all work-items in all work-groups. Work-items can read from or write to any element of a memory object. Reads and writes to global memory may be cached depending on the capabilities of the device.
- **Constant Memory:** A region of global memory that remains constant during the execution of a kernel. The host allocates and initializes memory objects placed into constant memory.
- **Local Memory:** A memory region local to a work-group. This memory region can be used to allocate variables that are shared by all work-items in that work-group. It may be implemented as dedicated regions of memory on the OpenCL device. Alternatively, the local memory region may be mapped onto sections of the global memory.
- **Private Memory:** A region of memory private to a work-item. Variables defined in one work-item's private memory are not visible to another work-item.

The application running on the host uses the OpenCL API to create memory objects in global memory, and to enqueue memory commands that operate on these memory objects. The host and OpenCL device memory models are, for the most part, independent of each other. This is by a necessity given that the host is defined outside of OpenCL. They do, however, at times need to interact. This interaction occurs in one of two ways: by explicitly copying data or by mapping and unmapping regions of a memory object. The host is not

shown. To copy data explicitly, the host enqueues commands to transfer data between the memories object and host memory. These memory transfer commands may be blocking or non-blocking. The OpenCL function call for a blocking memory transfer returns once the associated memory resources on the host can be safely reused. For a non-blocking memory transfer, the OpenCL function call returns as soon as the command is enqueued regardless of whether host memory is safe to use. The mapping/ unmapping method of interaction between the host and OpenCL memory objects allows the host to map a region from the memory object into its address space. The memory map command may be blocking or non-blocking.

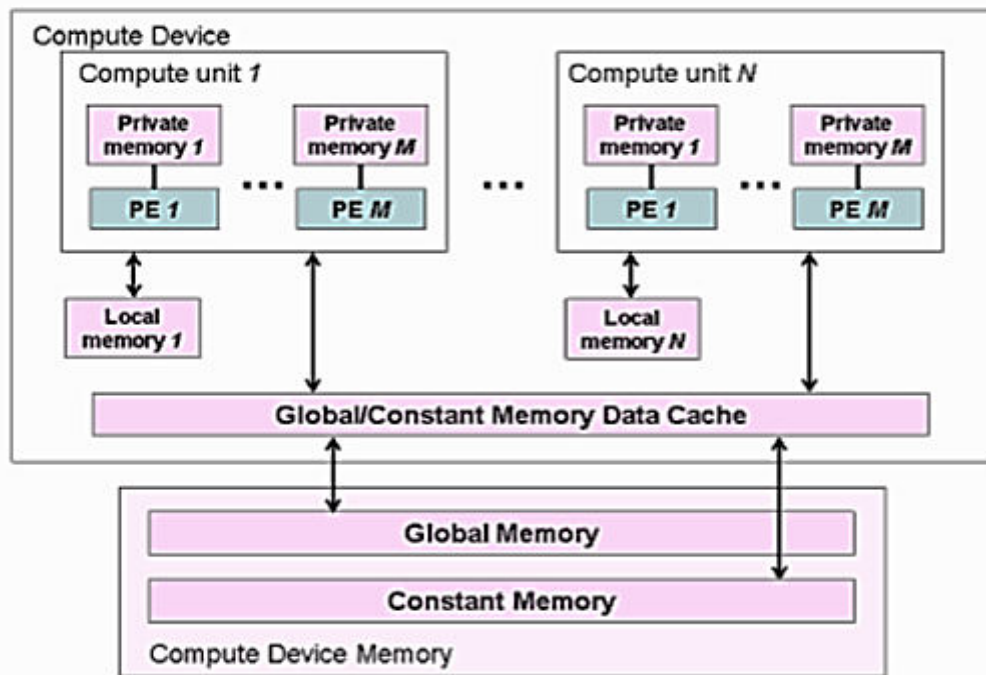


Figure 1: Conceptual OpenCL device architecture

IV. CONCLUSION

In this review paper survey is related to a parallel implementation of BFS for Kepler GPU architectures using OpenCL. BFS-4K implements different techniques to deal with the potential work load imbalance and thread divergence caused by any actual graph non-homogeneity. The innovative outcome suggests that the advanced approach is a worth, which can significantly improve the performance of the BFS algorithm. It also proposes the different techniques to overcome the problem of workload imbalance and thread divergence caused by any actual graph non-homogeneity. The proposed techniques is to help to improve the BFS and GPUs performance, which will be useful in various problem domains, like engineering, finance, medicine, and scientific applications. The techniques if used properly would also help to improve the performances of other different graph traversal algorithms.

V. REFERENCES

- [1] Federico Busato and Nicola Bombieri, "BFS-4K: An Efficient Implementation of BFS for Kepler GPU Architectures", IEEE transaction on parallel and distribution systems, Vol 26, No.7, July2015.
- [2] T. Lengauer and R. E. Tarjan, "A fast algorithm for finding dominators in a flow graph," ACM Trans. Program. Language Syst., vol. 1, no. 1, pp. 121-141, Jan. 1979.
- [3] T. Cormen, C. Leiserson, R. Rivest, and C. Stein, Introduction to Algorithms. Cambridge, MA, USA: MIT Press, 2009.
- [4] P. Harishand P. J. Narayanan, "Accelerating large graph algorithms on the GPU using CUDA," in Proc. 14th Int. Conf. High Performance Comput. 2007, pp. 197-208.
- [5] S. Hong, S. K. Kim, T. Oguntebi, and K. Olukotun, "Accelerating CUDA graph algorithms at maximum warp," in Proc. 16th ACM Symp. Principles Pract. Parallel Programming, 2011, pp. 267-276.
- [6] G. Singla, A. Tiwari, and D. P. Singh, "New approach for graph algorithms on GPU using CUDA," Int. J. Comput. Appl., vol. 72, pp. 38-42, 2013.
- [7] V. Agarwal, F. Petrini, D. Pasetto, and D. A. Bader, "Scalable graph exploration on multicore processors," in Proc. ACM/ IEEE Int. Conf. High Perform. Comput. , Netw. , Storage Anal., 2010, pp. 1-11.
- [8] C. E. Leiserson and T.B. Schardl, "A work-efficient parallel breadth- first search algorithm (or how to cope with then on determinism of reducers),"inProc.22nd ACM Symp. Parallelism Algorithms Archit., 2010, pp. 303-314.
- [9] Y. Xiaand V. K. Prasanna, "Topologically adaptive parallel breadth-first search on multicore processors," in Proc. 21st Int. Conf. Parallel Distrib. Comput. Syst., 2009, pp. 91-97.
- [10] Y. Jia, V. Lu, J. Hoberock, M. Garland, and J. C. Hart, "EDGEV Node parallelism for graph centrality metrics," GPU Computing Gems Jade Edition. San Mateo, CA, USA: Morgan Kaufmann, 2011, ch. 11.
- [11] L. Luo, M. Wong, and W.-m. Hwu, "An effective GPU implementation of breadth-first search," in Proc. 47th Des. Autom. Conf., 2010, pp. 52-55.
- [12] D. Merrill, M. Garland, and A. Grimshaw, "Scalable GPU graph traversal," in Proc. 17th ACM SIGPLAN Symp. Principles Pract. Parallel Programming, 2012, pp. 117-128.
- [13] Aaftab Munshi, "The OpenCL Specification", Khronos OpenCL Working Group.
- [14]

FOR CITATION

Mehetre, S.S. , Walunj, M.S. (2016) :: "Review on Efficient Implementation of BFS for Kepler GPU Architectures" *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 5995-5999, Paper ID: IJIFR/V4/E4/066.

EFFECT OF COMPETENCY ASSESSMENT ON JOB PERFORMANCE OF BANK EMPLOYEES IN INDIA

Paper ID

IJIFR/V4/ E4/ 068

Page No.

6000-6005

Subject Area

Business
Administration

Key Words

Competency Assessment, Banking Sector, Customer Satisfaction, Personality Traits, Job Performance

Keerthy T R

Assistant Professor
Department Of Business Administration
Al Ameen Cllege Aluva, Kerala

Abstract

Today, in every organization, human resource plays an important role in its success. The constant challenge for banks is getting their people to execute those behaviors that will deliver the organizational vision, values or strategic goals. Every person has different qualities, attitude, motives, personality traits, skills etc. that will affect their work performance. Human Resource (HR) department of banks is entrusted with the responsibility of searching, assigning and evaluating the employees by recruitment, selection and performance appraisal. The main objective of these functions is the assessment of suitability of the individuals for different functional jobs and developing their potential to be effective and excel in assigned jobs. Therefore, banking institutions are interested to ensure competency and professionalism to serve their customers better.

I. INTRODUCTION

At the heart of any successful activity lies the competency or skills. In today's competitive world it is becoming particularly important to build on the competitive activities of business. The competency approach to human resources management is not new. The early Romans practiced a form of competency profiling that attempts to detail the attributes of a "good Roman soldier". The introduction of competency based approaches within the corporate environment initiated around 1970 and their development and use since then has been rapid. The distinguished Harvard's psychologist, David McClelland is credited with introducing the idea of "competency" into the human resource literature; in his efforts to assist the United States Information Agency, to improve its selection procedures. The latter argued

that traditional intelligence tests, as well as proxies such as scholastic grades, failed to predict job performance. McClelland's counter argument to the growing dissatisfaction with the intelligence testing and the traditional job analytic approaches to personnel selection, was the proposal to test for competency. An organization's market value and financial success rely increasingly on competence, as well as on intangibles like: knowledge, loyal customers and other manifestations of human capital (McLagan, 1997). These factors, amongst others, have created an impetus for innovative trends and advancements in the practice of human factor assessment techniques. Competency-based assessment is a process that determines whether a person meets the standards of performance required by a job. It is a new and unfamiliar technique to many practitioners arousing numerous queries, interest and even objections (Hager, 1994). For building strong working relationship within the organization, competency of the people has to be continuously monitored and enhanced in congruence with the business plan. Competencies vary from job to job, department to department. For different departments and different jobs, these competencies have separate weightage. Accordingly, Competency Mapping rates the employee skills and helps them to improve the competence which is important for their career development. In view of the recent developments of liberalization and globalization, every organization has to achieve excellence to become global. Competence Development will play a pivotal role in this regard.

II. COMPETENCY AND PERFORMANCE RELATIONSHIP

Many researchers believe that competency is one of the determinants in performance. Using factor analysis and the structural equation method, Wang and Chen (2002) found that managerial traits, managerial skills of managers have a close relation to job performance. For the last few decades, competencies are often used for the basis of performance appraisal (Cardy and Selvarajan, 2006). The competencies, as a measurement tool, identify behavioral factors relevant to performance in the job and viewed as how the job is carried out. Hence many organizations use competency models as a part of their employee development program to appraise behavioral performance indicators together with objectives (Özçelik and Ferman, 2006). Accordingly, many scholars (McClelland, 1973, Levenson, et.al, 2006, Ryan, et.al., 2009) have claimed that assessment of employees' competencies provide an effective method for predicting job performance.

There is a variety of research that clarifies the relationship between competencies and employees' job (task) performance (McClelland, 1973; Liu, 200; Dainty, 2004; Levenson, 2006; Ryan, et.al, 2009). For example, findings of Ahadzie et.al.'s (2009) study demonstrate the suitability and potential usefulness of their competency-based model that reflects elements of both performance behaviors and outcomes in predicting the performance. Similarly, there are other research (Ryan et.al, 2009; Spencer, et.al 2008) highlighting the validity and utility of competencies in predicting employees' work performance.

Furthermore, there are studies that indicate the affects of certain competencies on individual job performance. For example Qiao and Wang, (2009) suggest that team-

building, communication; coordination, execution and continual learning are critical competencies for the success of middle managers in China. Researchers examined the influence of job performance based on different factors of competency, and some researchers examined the influence of competency on job performance from dynamic perspective by introducing intermediate variables.

III. INTRODUCTION TO COMPETENCY IN BANKING INDUSTRY

Competency is the sum total of all skills, knowledge and attitudes, manifested in the employee's behaviour. It is the "means" to achieve the "ends." "Competency is an underlying characteristic of an individual that is causally related to effective and/or superior performance in a job or a situation." (Boyatzis, 1982). A plan to build and effectively utilize the required competency is the core theme in competency management, which determines the economic optimization of organizational goals. In today's fast moving and knowledgeable world, it is very difficult for an organization to develop a sustainable competitive advantage. For achieving this, organizations are required to improve their operational efficiency and effectiveness. Competency management of currently available resources determines performance of any organization. Among the resources of an organization, skilled Labour is the vital resource for enhancing the output of the organization. According to Cheng et.al (2003) "the establishment of the competency of individuals is crucial for the further development of an organization". Therefore, it is very essential to identify the individual competencies to improve the performance of the employees. According to Zeti Akhtar Aziz (2005) "Banking is a knowledge intensive, skills-based and relationship-rich industry". In a progressive, complex and a more liberalized environment, competitiveness of banks will depend significantly on the quality of human resource and the extent to which the industry is able to enhance these talents. To compete effectively, banking institutions need professionals with the ample skills and expertise at all functional areas. Thus, the banking sector gives more priority to strengthen their intellectual human resources and the competency of them. With rapid changes taking place in the financial landscape, Scheduled Commercial banks in India need a new generation of professional bankers who are more customer-centric, technology-savvy, more highly qualified, flexible and agile with behavioural skill sets that are now more comprehensive than previously. The quality of human capital will increasingly become the cutting edge of competitiveness. Having competent staff to deliver high quality products and services is important to build customer confidence and goodwill, driving customer satisfaction, enhancing reputation, and ultimately realizing individual bank's corporate vision and strategic goals. Therefore, banking institutions are interested to ensure competency and professionalism to serve their customers better.

IV. GAPS IN EXISTING LITERATURE

The banking system in India is currently poised for far reaching changes. The emerging business profile of banks would include non-traditional areas like merchant banking, mutual

funds, newer financial services, personal investment counseling, factoring, venture capital and possibly consultancy and research services. Along with conventional banking the banks will also enter areas of modern business ventures. These changes will call for new knowledge, skills and attitudes and training systems will have to stand up to these challenges. The enhanced technological adoption can reduce the number of routine workers at the bottom levels and increase the number of knowledge workers. The new technology will transform the skill structure in banks. The advent of technological changes, especially extensive use of computers in the sector has changed the work patterns of the bank employees and has made it inevitable to advance the competencies of the workforce in the sector.

Banking services growth in India is closely associated with the employee competency in the respective organization in the form of its productivity and profitability. Since banks in India generally appoints well-educated and technically sound work forces for execution of its financial operations. Thus, it could be rightly said that banking is a knowledge-intensive, skills-based and relationship-rich industry. In an increasingly complex and more liberalized environment, the competitiveness of banking institutions will depend critically on the equality of human intellectual capital and the extent to which industry is able to leverage on these talents. To compete effectively, banking institutions needs professionals with the requisite skills and expertise not only at the strategic and management level, but also at the technical and operational levels.

With the entry of new players in the banking sector armed with innovative products, the banking system as a whole and the older banks in particular started to face a widening gap in skill sets of human resources. The new method of recruiting which mainly focused on aptitude and intelligence test along with interviews rather than assessing required job competencies may results in to widening skill gaps in the sector. Thus, the major challenge facing the banking sector is to formalize the competency analysis process starting from identification of workforce competencies required to perform the business activities to utilization of competency information for workforce activities like staffing, training and development and competency development. Therefore, it appears necessary to identify the various competencies required by the employees to perform their assigned task efficiently. And also it is necessary to investigate the effect of competency on the job performance of employees in the banking sector. Accurate job competencies need to be communicated to all the employed in the sector. Thus, the study is to examine the effect of competency assessment on job performance of employees in select commercial banks in Kerala.

V. CONCLUSION

Along with financial capital and technology, human resources contribute a lot to the capabilities of the banking sector to face the new challenges thrown open by globalization and liberalization. The winners in this sector will be the players who can understand the customer, fulfill customer needs, and achieve high levels of customer retention. For understanding the needs of the customers and fulfilling them, the bank employees both at

the managerial and clerical level must have the required level of competency and their job performance should also be analyzed. For this, they must aim to improve their skills as and when new changes occur. This study refers the various competencies required by the employees to perform their tasks and also to examine the influence of competency on job performance. Human Resources (HR) are more important in the service organizations than in goods producing industry. Banking sector is one of the most important service sectors. In the present era, Banking has become a highly competitive industry and for the competitive advantage, it has to enter new businesses and new markets, to develop new ways of working, to improve efficiency of employees, and to deliver higher levels of customer service. The recent trend is opening the commercial banks and their branches in every corner of the state for providing extended services to the society. Now everybody knows that the market and customers are changing frequently, their expectations have taken new forms and policies relating to people change as it is the people who are the key differentiators in the new era. But it is difficult to practice customer-centric strategic management without first achieving employee satisfaction. Therefore, the banks are focusing on the customer centric strategic management. Employees on the frontline in banking sector are in constant contact with the customer and the customer satisfaction depends upon employee performance that in turn depends on employee satisfaction.

VI. REFERENCES

- [1] Boyatzis, R. E. (1982). The competence manager: A model for effective performance. New York: John Wiley & Sons.
- [2] Ryan, G., Emmerling, R. J., & Spencer, L. M. (2009). Distinguishing high-performing European executives. *Journal of Management Development*, 28(9), 859-875.
- [3] (2010). Human Resource and Skill Requirements in Banking, Financial Services and Insurance Sector. National Skill Development Corporation.
- [4] Ahadzie, D. K., Proverbs, D. G., Olomolaiye, P. O., & Ankrah, N. (2009). Towards developing competency-based measures for project managers in mass house building projects in developing countries. *Construction Management and Economics*, 27(1), 89-102.
- [5] Cardy, R. L., & Selvarajan, T. (2006). Competencies: Alternative frameworks for competitive advantage. *Business Horizons*, 49, 235-245.
- [6] Dr. Suman Nayyar, S. K. (2010). Competency Mapping- A managerial Perception (A Study of HDFC Bank Ltd).
- [7] Hager, P. &. (1994). General issues about assessment of competence. *Assessment & Evaluation in Higher Education*, 19-22.
- [8] JAIN, D. V. (2013). Competency Mapping in Indian Industries - A Case Study. *International Journal of Emerging Research in Management & Technology*, 9-21.
- [9] Jimmy Kansal, N. J. (2012). Competency Mapping in Knowledge based organizations. *International Journal of Management*, 279-290.
- [10] K Nithyavathi, D. R. (2014). Job Competency of Bank Employees in India :With Special Reference to Coimbatore District. *Global Journal for Research Analysis*, 127-130.
- [11] KUMAR, J. K. (2012). COMPETENCY MAPPING: A GAP ANALYSIS. *International Journal of Human Resource Management and Research*, 35-43.
- [12] Levenson, A. R., Van der Stede, W. A., & Cohen, S. G. (2009). Measuring the Relationship Between Managerial Competencies and Performance. *Journal of Management*, 32(3), 360-380.

- [13] Mangaleswaran, T. (2007), Human Resource Management Practices and it outcomes in Indian and Srilankan Public Sector Banks unpublished Ph.D. thesis, University of Madras.
- [14] McClelland, D. C. (1973). Testing for competence rather than for “intelligence.”. American Psychologist, 1-14.
- [15] McLagan. (1997). Competencies: The next generation. Training and Development, 41-47.
- [16] Ozcelik, G., & Ferman, M. (2006). Competency Approach to Human Resources Management: Outcomes and Contributions in a Turkish Cultural Context. Human Resource Development Review, 5(1), 72-91.
- [17] Prastacos, G. P. (2012). An application of competencies management in the Banking sector. Athens: Athens University of Economics and Business.
- [18] Qiao, J. X., & Wang, W. (2009). Managerial competencies for middle managers: some empirical findings from China. Journal of European Industrial Training, 33(1), 69-80.
- [19] R.Yuvaraj. (2011). Competency Mapping– A DRIVE FOR INDIAN INDUSTRIES. International Journal of Scientific & Engineering Research.
- [20] S. BALAJI, D. V. (2012). A study on competency mapping in Adecco service organizations, Chennai. Asia Pacific Journal of Marketing & Management Review, 39-45.
- [21] Sahu, R. K. (2009). Competency Mapping. New Delhi: Excel Books.
- [22] Wang, C.M., & Chen, M.K. (2002). Managerial competency modeling: a structural equation testing. Psychological Science, 25(1), 513-516.

FOR CITATION

Keerthy, T.R. (2016) :: “Effect Of Competency Assessment On Job Performance Of Bank Employees In India” *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp. 6000-6005, Paper ID: IJIFR/V4/E4/068.

IMPACT OF GST ON INDIAN ECONOMY

Paper ID

IJIFR/V4/ E4/ 069

Page No.

6006-6012

Subject Area

Commerce

Key Words

GST, Indirect Taxes, Indian Economy, VAT

Pawan Kumar

Assistant Professor
Department of Commerce,
Dayanand College, Hisar (Haryana)

Abstract

Goods and Services Tax (GST) is an all inclusive tax levy on manufacturing, production and consumption of goods and services at a national level. Goods and Service Tax (GST) is one of the biggest taxation improve in India the, which are combine all state economies and provide growth to overall economy. It replaces existing system of indirect taxes such as Excise Duty, CST, VAT, service tax, entertainment tax, and other indirect tax. Once GST is implemented, all these indirect taxes would convert in a single tax format. There would be a centralized indirect tax system, which are levied by the central government. GST promises to fuel overall economic growth and increase indirect tax revenue of the government. Goods and service tax is a new concept of VAT which provide a widespread setoff for input tax credit and involve many indirect taxes from state and central level. Under GST, there would be single tax rate for both goods and services. The goods and services tax (GST) is designed at creating a single, consolidated market that will benefit both corporate and the economy. The replaced indirect tax system GST (Goods and service tax) is planned to implement in India. Several countries implemented this indirect tax system; France is the first country who introduced GST. In present scenario more than 165 countries use GST system. GST will be collected on value added goods and service at every point of sale and purchases in this supply chain. GST is expected to provide a business friendly environment, as system allows set off Goods and Service tax paid in the manufacturing of goods and service against the GST which is payable on the supply chain of goods and service. An effort is made in this paper to study the concept of goods and service tax and its impact on Indian economy. The study also desires to know the advantage and challenge of GST in Indian Economy.

I. INTRODUCTION

The proposed GST is probable to change the complete format of current indirect tax system. It is advised as biggest tax improvement since 1947. Currently different types of indirect taxes are levied and collected at different point in the manufacturing, production & supply chain. The Central Government and the State Government are empowered to levy respective taxes by Constitution of India. In 1994 the Service Tax (ST) was introduced to provide growth to Indian Economy and after that Value Added Tax (VAT) was introduced to levy tax on goods. Both taxes are generating major revenue in form of indirect taxes. Now the Goods and Services Tax (GST) will be a further remarkable breakthrough the next logical step towards an impressive indirect tax reform in the country. Experts say that GST will help the economy to grow in more efficient and equity manner by improving the tax collection as it will avoid all the tax barriers between state and central government via single tax rate system. The introduction of GST at the Central level will not only include comprehensively more indirect Central taxes and integrate goods and service taxes for the purpose of set-off relief, but may also lead to revenue gain for the Centre through portion of the dealer base by represent value addition in the allocable trade and increased compliance.

II. LITERATURE REVIEW

- Dr Shakir Shaik & Other (2015) in his study stated that GST implementation provide major improvement in pre-existing central excise duty at the national level and the sales tax system at the state level, the new tax will be a further significant breakthrough and the next logical step towards a comprehensive indirect tax reform in the country.
- Girish Garg (2014) in his study stated that GST is levy on all supply of goods and provision of services as well combination thereof. All sectors of economy whether the industry, business including Govt. departments and service sector shall have to bear impact of GST. All sections of economy viz., big, medium, small scale units, intermediaries, importers, exporters, traders, professionals and consumers shall be directly affected by GST.
- Monika Sehrawat, Upasana Dhanda (2015) in her study stated that GST will give India a world class tax system by grabbing different treatment to manufacturing and service sector. But all this will be subject to its rational design and timely implementation. There are various challenges in way of GST implementation. They need more analytical research to resolve the battling interest of various stake holders and accomplish the commitment for a cardinal reform of tax structure in India.

III. OBJECTIVES OF THE STUDY

- 1) To understand the Concept of GST in India.
- 2) To understand how GST will work in India.
- 3) To know the advantages and challenges of GST in Indian context.

- 4) To study the concept of Goods and Services Tax (GST) and its impact on Indian Economy.

IV. RESEARCH METHODOLOGY

The study target on comprehensive study of Secondary data collected from various books, National & international Journals, government reports, publications from various websites which focused on various form of Goods and Service tax. The usable secondary data is extensively used for research study.

V. CONCEPT OF GOODS AND SERVICE TAX

Goods and Services Tax (GST) is an all inclusive tax levy on manufacturing, production and consumption of goods and services at a national level. Goods and Service Tax (GST) is one of the biggest taxation improve in India the, which are combine all state economies and provide growth to overall economy. It replaces existing system of indirect taxes such as Excise Duty, CST, VAT, service tax, entertainment tax, and other indirect tax. Once GST is implemented, all these indirect taxes would convert in a single tax format. There would be a centralized indirect tax system, which are levied by the central government. GST promises to fuel overall economic growth and increase indirect tax revenue of the government. Goods and service tax is a new concept of VAT which provide a widespread setoff for input tax credit and involve many indirect taxes from state and central level. Under GST, there would be single tax rate for both goods and services. The goods and services tax (GST) is designed at creating a single, consolidated market that will benefit both corporate and the economy. The replaced indirect tax system GST (Goods and service tax) is planned to implement in India. Several countries implemented this indirect tax system; France is the first country who introduced GST. In present scenario more than 165 countries use GST system. GST will be collected on value added goods and service at every point of sale and purchases in this supply chain. GST is expected to provide a business friendly environment, as system allows set off Goods and Service tax paid in the manufacturing of goods and service against the GST which is payable on the supply chain of goods and service. It is not an additional tax but it is a system to examine the interstate transactions of goods and services and to further encourage that the tax should be received by the importer state as GST is a destination based tax. Centralization of goods and services taxation would give India a world class tax system and improve tax collections. It would avoid distortions of differential treatments of production and service sector. It will also reduce government's fiscal deficit as the tax collection system would become more transparent, simple and making tax evasion difficult. It is expected that GST will replace all the indirect taxes in India. At the center's level, GST will replace central excise duty, service tax and customs duties and at state level, GST will replace VAT, Octroi etc.

VI. GST – HOW IT WORKS IN INDIA?

There will be two types of GST laws, one at a central level called 'Central GST (CGST)' and the other one at the state level 'State GST (SGST)'. As there seems to be different tax rates for goods and services at the Central Level and at the State Level, and further division based on necessary and other property based on the need, location, geography and resources of each state. The GST model has following key aspects:

Components: GST will be divided into two components, namely, Central Goods and Service Tax and State Goods and Service Tax.

Applicability: GST will be applicable to all Goods and Services sold or provided in India, except from the list of exempted goods which fall outside its purview.

Payment: GST will be charged and paid separately in case of Central and State level.

Input Tax Credit: The facility of Input Tax Credit at Central level will only be available in respect of Central Goods and Service tax. In other words, the Input Tax Credit of Central Goods and Service tax shall not be allowed as a set-off against State Goods and Service tax and vice versa. (Dr. Shakir Shaik, Dr. S.A. Sameera, Mr. Sk.C. Firoz DOI: 10.9790/487X-171230105 www.iosrjournals.org)

VII. HOW TO PROVIDE GROWTH TO INDIAN ECONOMY

The Goods and Service Tax (GST) bill is expected to have capacity to remove complexities of existing indirect taxation system in the country. It is likely to improve the country's indirect tax revenue ratio to total revenue ratio and also reduce inflation. It is expected that the implementation of GST would result in increased income and output in various sectors of the economy. However, the reform is likely to benefit the production sector but may make things difficult for the services sector. Because production sector has heavy burden of indirect taxes but now indirect taxes become at low rate on production sector. It is seen that the GDP growth is likely to go up by 1.5 to 2.5%, but actual results can only be analysed after the Goods and Service Tax (GST) implementation. The response is mixed from different countries. While the New Zealand economy had a higher GDP growth, it was lower in case of Canada, Australia and Thailand after the GST was implemented. The one per cent tax that has been proposed to give the States for compensating their loss of revenue from the inter-state CST is likely to play a spoilsport. It is probable that it may affect the GDP adversely. Some political parties are already opposing the 1 per cent tax. The GST rate is expected to be around 17-18% and can be assumed as a tax neutral rate. It is expected that it is not likely to give any incremental tax revenue to the government, because some production sector already generate revenue at the around 26% for government. The sector which is going to be adversely affected due to implementation of Goods and Service Tax (GST) is the services sector. Service Tax already has been a hike from 12 to 14% from the 1st of June last year. Another 4 per cent increase due to GST implementation. The Make in India initiative aims at promoting manufacture in India with GST simplifying indirect tax regime in India. Manufacturing in India will see brighter days ahead, currently multiple taxes such as Excise duty and VAT are payable on production and sale by a manufacturer. One of the key boosters to nation's growth has been information technology

sector and the best up coming sector to contribute in future is E-commerce. It is natural for both of these industries to be concerned about what's in store for them on GST, ranging from compliance to supply challenges.

On a macro level, the impact is expected to be neutral while some states like Karnataka to be potential savings in the final cost to the end customer, other states like Haryana and Maharashtra may see higher prices. All in all, final GST law holds a crucial place as to how the interplay of credit flow, abatement and applicable tax rate.

VIII. ADVANTAGES OF GST

Apart from simplicity, there are many other advantages of implementing Goods and Service Tax in India:

Transparent form of Indirect Taxes: GST is a transparent Tax and also reduces numbers of indirect taxes. With GST implemented a business premises can show the tax applied in the sales invoice. Customer will know exactly how much tax they are paying on the product they bought or services they consumed

Reduce the cascading effect of Tax: GST avoid Cascading effect of indirect taxes on manufacturing and production sector. Because after implementation of GST all indirect taxes i.e. Excise Duty, CST, VAT and other taxes become a single tax system.

Reduction in general prices: Cost of production become low after the implementation of GST tax rate system, which is a very big reason to say that we can see a reduction in prices. However, if the government seeks to introduce GST with a higher rate, this might be lost.

Increase in Investment in Economy: Input tax credit is not available on many capital goods in existing tax rate system, So Investment in these sectors become at low level. Full input tax credit under GST will mean a 12-14% part in the cost of capital goods. So it is expected that a 5-6% increase in capital goods investment and overall 2-3% increase in Investment.

Increase in Government Revenues: Transparency and simplicity of GST attract all manufacturer and producer to follow GST system, Because of this government revenue become high.

Less developed states get a revenue lift: The current 2% inter-state levy means production is kept within a state. Under the GST national market, this can be dispersed, creating opportunities for others. It is expected that GST system beneficial to Eastern States, because these states have low revenue compare than other states.

Reduce administration Cost: Instead of maintaining big records, returns and reporting under various different statutes, all assesses will find comfortable under GST as the compliance cost will be reduced. It should be noted that the assesses are, nevertheless, required to keep record of CGST, SGST and IGST separately.

IX. CHALLENGES OF GST IN INDIAN ECONOMY

The implementation of GST is not only going to give boost to the growth engine pursued by the government but it is also important as it is going to switch over from the existing indirect tax rate system in the country.

Considering the above importance of the GST, there are some few challenges for success of GST in India

- Political barriers for implementation of GST.
- With respect to number of enactments of statutes.
- Inclusion of all Indirect Tax in single tax system
- Information technology structure.
- 'RNR' and 'Threshold limit' for GST.
- State Tax officials training and development before implementation of GST.

X. CONCLUSION

The above points that have been examined in the paper are informative and not thorough. However, these points are fundamental requirements of an effective implementation of GST. Financial planning plays a vital role on the economy through better tax policies. Due to some weakness of existing indirect taxation policies, Indian economy goes on back foot. So it is time demand of economy to implement Goods and Service Tax (GST). GST provide a better indirect system in which limitation of existing indirect taxation is remove. GST make simple and transparent taxation system and remove the complexity of legal compliance. So every business unit may use GST system. It impalement will also results in lower cost of production, that will make the domestic products more competitive in local and global market. No doubt that GST will give to India a world class tax system. There are many challenges in way of GST implementation as discussed above in paper. They need more interpretive research to accomplish the commitment for an important reform of tax structure in India.

XI. REFERENCES

- [1] Dr. Shakir Shaik, Dr. S.A.Sameera, Mr. Sk.C. Firoz IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 17, Issue 12 .Ver. III (Dec. 2015), PP 01-05 www.iosrjournals.org
- [2] Girish Garg, Basic Concepts and Features of Good and Service Tax In India. International Journal of scientific research and management (IJSRM), Volume 2, Issue 2, Pages 542-549, 2014
- [3] The Empowered Committee of State Finance Ministers (2009), First Discussion Paper on Goods and Services Tax In India, November 10, 2009.
- [4] Monika Sehrawat, Upasana Dhanda, GST in India: A Key Tax Reform. In International Journal of Granthaalayah, vol.3 (Iss.12): December, 2015.
- [5] Dr. R. Vasanthagopal, GST in India: A Big Leap in the Indirect Taxation System, International Journal of Trade, Economics and Finance, Vol. 2, No. 2, April 2011
- [6] FICCI, Towards the GST, An approach paper
- [7] www.taxguru.in/goods-and-service-tax/goods-service-tax-gst-2.html

- [8] <http://www.indiataxes.com/Information/VAT/Introduction.htm>
[9] http://www.taxmanagementindia.com/wnew/detail_rss_feed.asp?ID=1226
[10] www.goodsandservicetax.com

FOR CITATION

Kumar, P. (2016) :: “Impact of GST on Indian economy” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 6006-6012, Paper ID: IJIFR/V4/E4/069.

A STUDY ON PSYCHOLOGICAL CONTRACT BETWEEN EMPLOYEES AND THEIR EMPLOYERS IN IT SECTORS

Paper ID

IJIFR/V4/ E4/ 067

Page No.

6013-6021

Subject Area

Business
Aministration

Key Words

Psychological Contract, IT Companies, Employer, Employees, Organization

E. Kuzhalisai Arasi

Assistant Professor
Department of MBA,
St. Joseph's College of Engineering and Technology,
Thanjavur-Tamil Nadu

Abstract

The purpose of this study is to identify a variety of employment relationships based upon an economy-wide, representative sample in the IT sectors. The psychological contract includes solid agreements between company and its employees, beyond the written contract, specifying their contributions, expectations, beliefs, promises, and obligations between both parties. We turn to psychological contract studies examining different types of psychological contracts. This approach allows us to construct a meaningful conceptualization of employer and employee obligations. Implications of the study for IT industry have been discussed for harnessing the energy, knowledge and creativity of employees for competitive advantage.

I. INTRODUCTION

The Psychological Contract is a deep and varied concept and is open to a wide range of interpretations and theoretical studies. Primarily, the Psychological Contract refers to the relationship between an employer and its employees, and specifically concerns mutual expectations of inputs and outcomes.

1.1 Definition:

"A psychological contract represents the mutual beliefs, perceptions, and informal obligations between an employer and an employee. It sets the dynamics for the relationship and defines the detailed practicality of the work to be done. It is distinguishable from the

formal written contract of employment which, for the most part, only identifies mutual duties and responsibilities in a generalized form."

1.2 Psychological Contract In Industry:

People who can bring practical knowledge to corporations and manage information are really scarce today. They represent the new individualism which is displacing the traditional collectivistic perspective. They are becoming increasingly valuable. Such people are most conspicuous in the information technology field in India. They look upon their employment as a challenge to effectively apply their unique knowledge to their workplace. Their redefined roles have caused drastic changes in their expectations from the organization and vice versa.

1.3 Psychological Contract In Indian 'IT' Industry:

This is especially true of IT companies, whose assets consist almost entirely of the knowledge of their people. Successful Indian IT companies understand the value of people for their operations. Product designs are an outcome of peoples' sustained personal innovations. Success in manufacturing is the result of teamwork applied to technology. IT companies' appetite for quality of products and services is founded on their ability to apply human intelligence for improving the processes on a continuous basis. These are a few major reasons why the Indian IT companies are performing so well globally. Labor statistics show that young people entering the workforce today will likely change jobs 7 to 10 times in their careers. Employee retention and employee utilization is a major concern for many IT companies. As the employee is the most important and costly resource for a software company, its utilization will have a direct influence on company's profitability. The IT industry can change the face of India, and it is a challenge to do research on this constantly changing sector. There are no studies conducted on this concept in the Indian context and it seems to be a soft issue with hard implications to the IT sector.

II. LITERATURE REVIEW:

- **Argyris(1960)** used the term 'psychological work contract' to describe an embeddedness of the power of perception and the values held by both parties (organization and individual) to the employment relationship.
- **According to Lewis (1997)**, long range development, creating high trust in employees can be achieved by introducing HRD strategies that integrate education, training opportunities and sequenced career development for employees.
- **Guest & Conway (2002)** offers a model of psychological contract where the strength of the psychological contract is related to management practices of the organization. Two important dimensions include employees' perception of fairness and trust and how employers keep the deal.
- **Tomprou and Nikolaou (2011)** state that the 'psychological contract' is now used to describe the contemporary employment relationship, and how this has changed in relation to the current economic climate.

- **Clutterbuck (2005)** describes the psychological contract as the unwritten assumptions employees and employers have about the content of the social exchange between them.
- **Shen (2010)** describes the psychological contract as having both a transactional and relational element. Transactional elements are associated with pay, working hours, and the employment time-frame.

III. OBJECTIVES OF THE STUDY

- To standardize and measure the impact of psychological contract on organizational effectiveness
- To study the factors affecting of psychological contract
- To find out relationship between psychological contract and organizational effectiveness
- To open new vistas for further researches.

IV. STATEMENT OF THE PROBLEM

Today's scenario most of the employees bring up with their unlimited needs & expectations. Mainly these could be fulfilled through their working environment. The employees struggle to work in case of meagre amount, job insecurity, disputes among employees or management, workload, organizational code of conduct, etc. These causes stress for the employees. These problems arise due to improper maintenance of psychological contract between the management and the employees. Because of this reason it recently compared with each employees and employers.

V. RESEARCH METHODOLOGY

The study is mainly based on the primary data. The study conducted with the IT employees belonging to the Trichy city. Structured questionnaire have been framed using five point scale techniques and used for this study to collect the data. The data collected from the employees who are working in software and IT based companies with different attitudes. The study comprises 100 employees and their employers.

5.1 Sample Design: A convenient sampling (Stratified disproportionate non random sampling) of 100 employees and their employers was taken up for the current study in which respondents of the study was requested to complete the questionnaire on voluntary basis.

5.2 Data Collection: The data collected from the respondents through the structured questionnaire method and interview schedule. The Secondary data has been collected from the various Journals, Books, Newspapers, Magazines and Websites, which provide valuable Information related to the topic.

5.3 Tools For Data Analysis: The information collected from the employees is analyzed using the statistical tools such as Chi-Square test and Anova test.

VI. DATA ANALYSIS AND INTERPRETATION

6.1 Chi Square Test

H_A : There is a significant relationship between the opinions that employees feel they are a part in the organization and the management opinion for their employees in supporting to achieve the company objectives.

Table 1: Employees Support For Company Mission & Objectives

	Employees Support For Company Mission & Objectives			
Feel Part Of Team In This Orgn.		Disagree	Strongly Agree	Total
	Neutral	25	15	40
	Strongly Agree	0	60	60
	Total	25	75	100

$$X^2 \text{ TableValue} = (C-1)(r-1) \\ = (2-1)(2-1) = 1*1 = 1 @ 0.05 = 3.841$$

Calculated value = 50

Since $X^2 \text{ TableValue} < \text{CalculatedValue}$, we reject H_0 & Accept H_A

Result: There is a significant relationship between the opinions that employees feel they are a part in the organization and the management opinion for their employees in supporting to achieve the company objectives.

2. H₀ : There is no significant relationship between the management maintain employee retention and the change management is easy in organization.

H_A : There is a significant relationship between the management maintain employee retention and the change management is easy in organization.

Table 2: Change Management Easy In Orgnization

	Change Management Easy In Orgnization				
Management Maintain Employee Retention		Strongly Disagree	Disagree	Neutral	Total
	Disagree	25	0	15	40
	Neutral	0	30	0	30
	Agree	0	30	0	30
	Total	25	60	15	100

$$X^2 \text{ TableValue} = (C-1)(r-1) \\ = (3-1)(3-1) = 2*2 = 4 @ 0.05 = 9.488$$

Calculated value = 100.

Since $X^2 \text{ TableValue} < \text{CalculatedValue}$, we reject H_0 & Accept H_A

Result : There is a significant relationship between the management maintaining employee retention and the change management is easy in organization.

3. H₀ : There is no significant relationship between the management provide opportunities to prove employees worth and the employees support the organization during complex situations.

H_A : There is a significant relationship between the management provide opportunities to prove employees worth and the employees support the organization during complex situations.

Table 3: Employees Support During Complex Situations

	Employees Support During Complex Situations				
		Disagree	Agree	Strongly Agree	Total
Opportunities To Prove Employees Worth	Disagree	25	0	0	25
	Neutral	0	15	0	15
	Agree	0	30	0	30
	Strongly Agree	0	0	30	30
	Total	25	45	30	100

$$X^2 \text{ TableValue} = (C-1)(r-1) \\ = (3-1)(4-1) = 2*3 = 6 @ 0.05 = 12.592$$

Calculated value = 199.96

Since $X^2 \text{ TableValue} < \text{CalculatedValue}$, we reject H_0 & Accept H_A

Result: There is a significant relationship between the management providing opportunities to prove employees worth and the employees support the organization during complex situations.

4. H₀ : There is no significant relationship between the company reciprocates the employees effort and the chance of promotion if the employees work hard.

H_A : There is a significant relationship between the company reciprocates the employees effort and the chance of promotion if the employees work hard.

Table 4: Chance of Promotion

	Chance Of Promotion If Workhard					
		Disagree	Neutral	Agree	Strongly Agree	Total
Reciprocates Employees Effort	Disagree	25	0	0	0	25
	Neutral	0	0	0	30	30
	Agree	0	15	30	0	45
	Total	25	15	30	30	100

$$X^2 \text{ TableValue} = (C-1)(r-1) \\ = (4-1)(3-1) = 3*2 = 6 @ 0.05 = 12.592$$

Calculated value = 199.96.

Since $X^2 \text{ TableValue} < \text{CalculatedValue}$, we reject H_0 & Accept H_A

Result: There is a significant relationship between the companies reciprocates the employees effort and the chance of promotion if the employees work hard.

6.2 ANOVA - TEST

Table 5: ANOVA - Test 1

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	Total
Between Samples	83,259.67	4 - 1 = 3	$\frac{83,259.67}{3}$	27,753.22
Within Samples	2084.01	12 - 4 = 8	$\frac{2084.01}{3}$	260.50

1. **H₀** : There is a significant difference among the variables X₁, X₂, X₃ & X₄

H_A : There is no significant difference among the variables X₁, X₂, X₃ & X₄

$$\text{Calculated Value} = \frac{27753.22}{260.5} = 106.53$$

$$\begin{aligned} \text{Table Value} &= (4 - 1) (12 - 4) \\ &= 3 @ 8 = 7.59 \end{aligned}$$

since the table value less than calculated value, we reject H₀ & accept H_A

X₁ – Provide opportunities to prove employees worth

X₂ – Expect to gain promotion in this company with length of service & efforts

X₃ – Employees expect to grow in this organization

X₄ – Career path in the organization clearly mapped out

2. **H₀** : There is a significant difference among the variables X₁, X₂ & X₃

H_A : There is no significant difference among the variables X₁, X₂ & X₃

Table 6: ANOVA - Test 2

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	Total
Between Samples	272.0778	3 - 1 = 2	$\frac{272.0778}{2}$	136.038
Within Samples	1916.64	9 - 3 = 6	$\frac{1916.64}{6}$	319.44

$$\text{Calculated Value} = \frac{319.44}{136.04} = 2.348$$

$$\text{Table Value} = v_1 = 6, v_2 = 2 = 99.33$$

Since the table value greater than the calculated value, we accept H₀ & reject H_A

X₁ – Provide job security for the employees

X₂ – The Company doing what they are saying like policies, decisions, etc.

X₃ – The company management prefers & maintains employee retention

6.3 Percentage Analysis

Table 7: Employees rewarded & treated equally

Particulars	Respondents	Percentage
Strongly Disagree	0	0%
Disagree	10	10%
Neutral	55	55%
Agree	20	20%
Strongly Agree	15	0%
Total	100	100%

Interpretation: It is inferred from the above table that 10% of the respondents are disagree, 55% of the respondents are neutral and 20% of the respondents are agree that they are rewarded and treated equally by the organization.

Table 8: Employees make personal sacrifice for the organization

Particulars	Respondents	Percentage
Strongly Disagree	0	0%
Disagree	20	20%
Neutral	50	50%
Agree	25	25%
Strongly Agree	5	5%
Total	100	100%

Interpretation: It is inferred from the above table that 10% of the respondents are disagree, 55% of the respondents are neutral and 20% of the respondents are agree that they are personally sacrifice for the organization.

Table 9: Employees trust their manager to look after their career growth

Particulars	Respondents	Percentage
Strongly Disagree	5	5%
Disagree	15	15%
Neutral	40	40%
Agree	25	25%
Strongly Agree	15	15%
Total	100	100%

Interpretation: It is inferred that 5% of the respondents are strongly disagree, 15% of the respondents are disagree, 40% of the respondents are neutral, 25% of the respondents are agree and 15% of the respondents are strongly agree to trust their manager to look after their growth.

Table 10: Loyalty to the organization defined by terms of employee's contract

Particulars	Respondents	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	45	45%
Agree	35	35%

Strongly Agree	20	20%
Total	100	100%

Interpretation: It is inferred from the above table 45% of the respondents are neutral, 35% of the respondents are agree, 20% of the respondents are strongly agree that they are loyal to the organization by the terms of their contract.

Table 11: Human Resources considered as vital asset for this company

Particulars	Respondents	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	30	30%
Agree	50	50%
Strongly Agree	20	20%
Total	100	100%

Interpretation: It is inferred that 30% of the respondents are neutral, 50% of the respondents are agree, 20% of the respondents are strongly agree that the organization considered Human Resources as a vital asset.

VII. FINDINGS

- 20% of the respondents are strongly agreed that they are loyal to the organization by the terms of their contract.
- 20% of the respondents are strongly agreed that the organization considered Human Resources as a vital asset.
- 15% of the respondents are strongly agreed to trust their manager to look after their growth.
- 20% of the respondents are agreed that they are personally sacrificed for the organization.
- 20% of the respondents are agreed that they are rewarded and treated equally by the organization.
- There is a significant relationship between the company reciprocates the employees effort and the chance of promotion if the employees work hard.
- There is a significant relationship between the management providing opportunities to prove employees worth and the employees support the organization during complex situations.
- There is a significant relationship between the management maintaining employee retention and the change management is easy in organization.
- There is a significant relationship between the opinions that employees feel they are a part in the organization and the management opinion for their employees in supporting to achieve the company objectives.

VII. SUGGESTION

- The company can try to bind their employees to support in achieving their objectives.
- The organization should train the employees for adopting with change management.
- More opportunities can be provided to prove employees worth.

- Chances of promotion can be further increased.
- Mutual trust in the hierarchy can be enhanced.

VIII. CONCLUSION:

It is concluded from the above study, employees and employers in the IT sectors having smooth psychological contract. The psychological contract is an intangible one which comprises of basic elements like motivation, career growth, equity treatments, value-based pays, etc from the employees view and similarly, achieving company objectives by the employees, employees support, adopting changes, etc. from the employers view. Majority of the respondents feel the change management might cause stress for them. So, the companies must give regular training and motivational programmes before implementing the change in particular sectors. Obviously the company must get the feedback frequently from the employees to identify their satisfaction level. So, that bilateral benefit from both sides can be envisaged for a long period.

IX. REFERENCES

- [1] Journal of Organisation & Human Behaviour, Volume 1, Issue 4, October 2012.
- [2] Argyris, C. (1960), Understanding Organisational Behaviour, Homewood, Illinois: Dorsey Press.
- [3] Guest, D.E. and Conway, N. (2002), Pressure at Work and the Psychological Contract, Chartered Institute of Personnel and Development (CIPD), London.
- [4] <http://www.businessballs.com/psychological-contracts-theory.htm>
- [5] https://en.wikipedia.org/wiki/Psychological_contract
- [6] www.hrzone.com/hr-glossary/

FOR CITATION

Arasi, K. E. (2016) :: “A Study On Psychological Contract Between Employees and their Employers in IT Sectors” *International Journal of Informative & Futuristic Research* (ISSN: 2347-1697), Vol. 4 No. (4), December 2016, pp 6013-6021, Paper ID: IJIFR/V4/E4/067.

A REVIEW ON SOIL STABILIZATION USING DIFFERENT INDUSTRIAL WASTES AND ADMIXTURES IN RECENT YEARS

Paper ID

IJIFR/V4/ E4/ 070

Page No.

6022-6025

Subject Area

GeoTechnical
Engineering

Key Words

Stabilization, Admixtures, Industrial Waste

Uma G. Hullur

Assistant Professor
Department of Civil Engineering
KLS Gogte Institute Of Engineering and Technology,
Belagavi-Karnataka

Abstract

Stabilization of soils means improving the engineering properties of the soils to achieve the specified requirements. Stabilization was carried either by method of compaction or by adding admixtures. Recent studies showed that certain waste products having pozzolonic property from different industries were used to stabilize the soils. This proved an advantageous method, as the disposal of the waste materials was causing problem to the environment. Keeping in view the above intension, literature review was undertaken to understand recent studies under taken for stabilization of soils and the same is presented below.

I. INTRODUCTION

Stabilization is a method where the stabilizer acts as a stabilizing agent that alters the properties of a soil chemically to meet the specified engineering requirements based on its field application. Some soils are always susceptible for settlement and consolidation. Stabilization of such type of soil results in increased strength, reduced compressibility and shrinkage. In this paper a review of the stabilization of plastic soils for different structural applications are studied.

1.1 M.Adams Joe and A. Maria Rajesh in July 2015 studied the stabilization of soil using industrial waste sand copper slag cement and lime. They conducted various experiments like specific gravity, sieve analysis, proctor compaction UCS test and CBR test .These results showed the considerable change in the engineering properties of soil that is there was appreciable improvement in the maximum dry density and optimum moisture content and

enhancement in the UCS of soil in subbase than normal soil. It can reduce the construction cost by adopting the stabilization method.

1.2 Aniculaesi Mircea, Lungu Irina and Stanciu Anghel in May 2014 studied the effect of Eco-cement (GGBS) on the expansive soil strength. Here the soil was classified as CH and the engineering properties of clayey soil were found. When the soil was tested for its liquid limit it showed 86.03% and plastic limit as 28.2% which displayed it as a very high degree of expansion leading to serious problems in geotechnical design. The soil was treated with 10% eco-cement and Portland cement. The test determined the strength development of compacted cylinders at different curing periods such as 1, 7, 14, 24, 30 days. The results showed that 50% replacement of Portland cement with eco-cement, the UCS reached 50% of maximum strength. The effect of soaking was less significant. The addition of cement increased plasticity index which the soils show better workability. The compression index C_c , decreased with increasing curing time and consolidation pressure.

1.3 Divya Krishna. K V. Janani, P.T. Ravichandran, R Annadurai and Manisha Gunturi in March 2014 conducted experimental study on soil stabilization using Phosphogypsum and flyash. Here the percentage of Phosphogypsum was varied from 2% 4% and 6% with fixed quantity of flyash as 5%. The unconfined compressive strength test and microstructure analysis of the soil with different percentage of additives were determined for the curing period of 3 days and 7 days. The UCS soil samples were prepared at their MDD achieved in compaction test. The strength of stabilized soil increased with increase in amount of phosphogypsum in addition to flyash content of 5%. The strength increased with increase in the curing period. The minimum increase in UCS was 1.72 and 2.25 times for two different soil on addition of 5% flyash and 2% phosphogypsum at curing period of 3 days.

1.4 Prakash Chavan and Dr. M.S. Nagakumar. Here the black cotton soil was treated with Bagasse ash with different percentages and UCS and CBR test was performed. The test results showed the reduction in plasticity Index of Bagasse Ash treated soil from 24% to 17.40%. It was also observed that by addition of 9% bagasse ash for black cotton soils, the density has significant increases from 1.57 to 1.78 gm/cc, But OMC decreases from 17.20 to 15.00%. Further addition of Bagasse Ash decreases the density and increases the OMC. It was observed, improvement of CBR value from 1.16% to 6.8% for addition of 9% bagasse Ash. The UCS of specimens increased from 93 kN/m² to 429 kN/m² at 9% bagasse ash then later it decreases.

1.5 Norazlan Khalid, Mazidah Mukri, Faizah Kamarudin, Mohd Fadzil Arshad carried the experimental study on the clay soil, stabilized using Waste Paper Sludge Ash (WPSA). WPSA considered as finely waste product resulting from the combustion of wastepaper sludge in paper recycling factories waste paper. The WPSA used in this study has been tested and based on ASTM C618, WPSA classified as Class-C fly ash because WPSA containing more than 20% lime (CaO) and possesses cementitious properties and pozzolanic properties that resulting in the self-cementing characteristics. This Class-C WPSA is self-cementing; activators such as lime or cement are not required. The slightly sandy CLAY of high plasticity of clay soil sample has been used in this study. The first objective of this

study was to determine the optimum concentration percentage of WPSA as additives based on the compressive strength. The second objective is to determine the strength development of clay soil stabilized at the optimum percentage of WPSA at 0 days, 14 days and 28 days of curing periods. The third objective is to determine the CBR value of clay stabilized with the optimum percentage of WPSA for soaked and unsoaked conditioned. This study involved the testing of unconfined compressive strength test (UCT) to determine the optimum percentage of WPSA and strength development clay soil stabilized at the optimum percentage of WPSA. The second testing of California Bearing Ratio (CBR) test to determine the CBR value for clay stabilized with optimum percentage of WPSA. Result shows that the optimum concentration of WPSA to stabilize the clay soil was about 10% at the maximum compressive strength of 737kPa. Addition of 10% WPSA has increased the value of compressive strength compared to the control (unstabilized soil) from 0 days to 28 days of curing periods respectively. Furthermore, the CBR value of clay soil after stabilized with 10% WPSA was increased about 1.5 times the untreated for unsoaked condition and 3.6 times the unstabilized sample for soaked condition. This study shows that the clay soil can stabilized using WPSA and WPSA effective to enhance clay soil strength for long periods.

1.6 Dr. Robert M. Brooks studied Stress strain behavior. The unconfined compressive strength showed that failure stress and strains increased by 106% and 50% respectively when the flyash content was increased from 0 to 25%. When the RHA content was increased from 0 to 12%, Unconfined Compressive Stress increased by 97%. .When the RHA content was increased from 0 to 12%, CBR improved by 47%. The optimum RHA content was found at 12% for both UCS and CBR tests. The swelling potential of expansive soil decreases with increasing swell reduction layer thickness ratio. The vertical movement of clay soils with cushioning material stabilizes after 3 cycles of swelling and shrinkage. An RHA content of 12% and a flyash content of 25% are recommended for strengthening the expansive subgrade soil while a flyash content of 15% is recommended for blending into RHA to form a swell reduction layer.

II. CONCLUSION

From all the above papers its clear that the industrial wastes used in the soil stabilization helps in improving the strength and CBR value. The results of the above investigation have shown beneficial effects are obtained by the addition of lime and waste to soil. Hence to conclude,

1. Fly ash can be used to stabilize soil in different civil works such as in road construction by reducing the layer thickness, in development of low permeability etc.
2. It was observed that the agricultural waste i.e. Rise Husk ash was used in soil stabilization along with cement or lime as additive.
3. The use of WPSA in soil stabilization proved to be effective in enhancing the strength of clayey soil for longer period.
4. By the use of Bagasseash for black cotton soil stabilization had increased the CBR value and UCS value.

5. The above papers showed that the stabilizers/admixtures are used in combination of any two or sometime only one. No where, either the stabilizers or the admixtures are blended.

III. REFERENCES

- [1] M.Adams Joe , A.Maria Rajesh (2015), “Soil stabilization using industrial waste and lime ” international journal of Scientific research engineering and technology, volume 4,issue 7, july 2015 pp.799-805.
- [2] Aniculaesi Mircea ,Lungu Irina ,Stanciu Anghel”Effects of Eco-cement (GGBS) on the expansive soil strength” journal of civil engineering and science, vol 3 Issue1,Mar 2014 pp.74-80.
- [3] Divya Krishna.K, V.Janani , P.T.Ravichandran ,R. Annadurai , Manisha Gunturi “Soil Stabilisation Using Phosphogypsum and flyash”international journal of engineering trends and technology.Vol 9 Issue 14 Mar 2014 pp 736-739.
- [4] Prakash Chavan and Dr.M.S.Nagakumar “Studies on soil stabilization by using Bagasse Ash”International journal of scientific research engineering and technology ISSN:2278-0882 ICRTIET-2014 conference Proceeding 30-31 Aug-2014.
- [5] Norazlan Khalid, Mazidah Mukri, Faizah Kamarudin, Mohd Fadzil Arshad
- [6] Dr. Robert M. Brooks “Soil stabilization with Fly ash and Rice husk ash “International journal of research and reviews in applied sciences ISSN:2076-734X,EISSN:2076-7366 vol 1 ,Issue 3 Dec 2009.

FOR CITATION

Hullur, G. U. (2016) :: “A Review On Soil Stabilization Using Different Industrial Wastes And Admixtures In Recent Years” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp 6022-6025, Paper ID: IJIFR/V4/E4/070.

REVIEW ON SENTIMENT ANALYSIS OF TWITTER STREAMING DATA FOR RECOMMENDATION USING APACHE SPARK

Paper ID

IJIFR/V4/ E4/ 071

Page No.

6026-6031

Subject Area

Computer
Engineering

Key Words

Big Data, Bloom Filters, Classification, Map-Reduce, Spark, Sentiment Analysis, Text Mining, Twitter

1 st	Rohini Sonawane	M.Tech. Student Department of Computer Engineering, SITRC, Nashik, Maharashtra
2 nd	Amit Palve	Professor Department of Computer Engineering, SITRC, Nashik, Maharashtra

Abstract

Twitter is free social networking micro- blogging service. In that micro-blogging allows to registered members to broadcasting the short posts also called tweets. It can broadcast the tweets by using multiple platforms and devices. Twitter member replies to tweets. Existing system focuses on document level sentiment analysis that means they used Hadoop Framework for concerning moving or product reviews. In that system web pages or blocks on which posts are published therefore in that system complexity of document level opinion mining many efforts have been made towards the sentence level sentiment analysis. The existing systems classify the accuracy only one word. This process is time consuming due to documentation. In the system which we are devolve in that we used spark framework instead of Hadoop framework. Due to the use of Spark Framework, garbage or unclean data are removing. So that user gets better efficiency and less time required for processing, than earlier system.

I. INTRODUCTION

The emergence of social media has given web user save venue for expressing and sharing their thoughts and opinions on all kinds of topics and events. Twitter, with nearly 600 million users¹ and over 250 million messages per day has quickly become a goldmine

for organisation to monitor their reputation and brands by extracting and analysing the sentiment of the Tweets posted by the public about them, their markets, and competitors. Sentiment analysis over Twitter data and other similar microblogs faces several new challenges due to the typical short length and irregular structure of such content. Two main research directions can be identified in the literature of sentiment analysis on micro blogs. First direction is concerned with finding new methods to run such analysis, such as performing sentiment label propagation on Twitter follower graphs [14], and employing social relations for user-level sentiment analysis. The second direction is focused on identifying new sets of features to add to the trained model for sentiment identification, such as micro blogging features including hash tags, emoticons [2], the presence of intensifiers such as all-caps and character repetitions etc., and sentiment-topic features

A large scale solution is presented in the build a sentiment lexicon and classifies tweets using a Map-Reduce algorithm and a distributed database model. [8]. Here, the Map Reduce model we are brief describe the data processing in Map Reduce is based on input data partitioning, the partitioned data is executed by a number of tasks in many distributed nodes and give the output of key value. That are exist two major task is called Map and Reduce respectively. Due to verify the complexity of document level opinion mining, many applications have been made towards the sentence level sentiment analysis. This phrases and assigns to each one of them a sentiment polarity task of sentiment analysis for batch processing the existing system and real time sentiment analysis for computation. The tweets are important for analysis because data arrive at a high frequency and algorithms that process them have to do so under very strict constraint of storage and time. It will be given away how to automatically collect a quantity for sentiment analysis and opinion mining purposes and then perform linguistic analysis of the collected quantity. Every one public tweets posted on twitter are freely available through a set of streaming APIs provided by Twitter. The sentiment classifier is constructed that is able to decide positive, negative and neutral sentiments. The hierarchical classification is already implemented on Hadoop and we are implemented on Spark

II. SURVEY REVIEW

1. Skuza et. al. discusses a possibility of making prediction of stock market basing on classification of data coming from Twitter micro blogging platform. Twitter messages are retrieved in real time using Twitter Streaming API. Tweets were collected over 3 months period from 2nd January 2013 to 31st March 2013. It was specified in the query that tweets have to contain name of the company or hashtag of that name. Predictions were made for Apple Inc. in order to ensure that sufficiently large datasets would be retrieved only tweets in English are used in this research work. Reposted messages are redundant for classification and were deleted.
2. Barbosa and Feng [2] argued that using n-grams on tweet data may hinder the classification performance because of the large number of infrequent words in Twitter. Instead, they proposed using micro blogging features such as re-tweets, hashtags, replies,

punctuations, and emoticons. They found that using these features to train the SVMs enhances the sentiment classification accuracy by 2.2% compared to SVMs trained from unigrams only.

3. Speriosu et al. [4] constructed a graph that has some of the microblogging features such as hashtags and emoticons together with users, tweets, word unigrams and bigrams as its nodes which are connected based on the link existence among them. They then applied a label propagation method where sentiment labels were propagated from a small set of nodes seeded with some initial label information throughout the graph.
4. Bian, Jiang, Umit Topaloglu, and Fan Yu describe an approach to find drug users and potential adverse events by analyzing the content of twitter messages utilizing Natural Language Processing (NLP) and to build Support Vector Machine (SVM) classifiers. Due to the size nature of the dataset (i.e., 2 billion Tweets), the experiments were conducted on a High Performance Computing (HPC) platform using Map Reduce, which exhibits the trend of big data analytics.
5. David F. et. al. propose an open framework to automatically collect and analyze data from Twitters public streams. This is a customizable and extensible framework, so researchers can use it to test new techniques. The framework is complemented with a language-agnostic sentiment analysis module, which provides a set of tools to perform sentiment analysis of the collected tweets.
6. Lin, Jimmy, and Alek Kolcz presents a case study of Twitters integration of machine learning tools into its existing Hadoop-based, Pig-centric analytics platform. The core of this work lies in recent Pig extensions to provide predictive analytics capabilities that incorporate machine learning, focused specifically on supervised classification. In particular, the authors have identified stochastic gradient descent techniques for online learning and ensemble methods as being highly amenable to scaling out to large amounts of data. In contrast to other linguistic approaches the authors adopt a knowledge-poor, data-driven approach. It provides a base-line for classification accuracy from content, given only large amounts of data.
7. Tare and Mohit proposed strategy that uses Apache Hadoop framework, an open source java framework, which relies on Map Reduce paradigm and a Hadoop Distributed File System (HDFS) to process data. The proposed Map Reduce strategy for classification of tweets using Nave Bayes classifier relies on two Map-Reduce passes. They have used the Twitter4j library to gather tweets which internally uses twitter REST API.
8. Agarwal et. al. [1] also explored the POS features, the lexicon features and the microblogging features. Apart from simply combining various features, they also designed a tree representation of tweets to combine many categories of features in one succinct representation. A partial tree kernel [8] was used to calculate the similarity between two trees. They found that the most important features are those that combine prior polarity of words with their POS tags. All other features only play a marginal role.

III. PROPOSED SYSTEM

In our proposed system for analyzing real time as well as online data for real-time applications using sentiment analysis we have divided real time architecture into four parts, i.e., 1) Data streaming 2) Data cleaning 3) Data Tokenization and classification and 4) Recommendation. In these four units various algorithms or techniques will be implied on data for its analysis. The functionalities and working of four units is as explained and shown in diagram below:

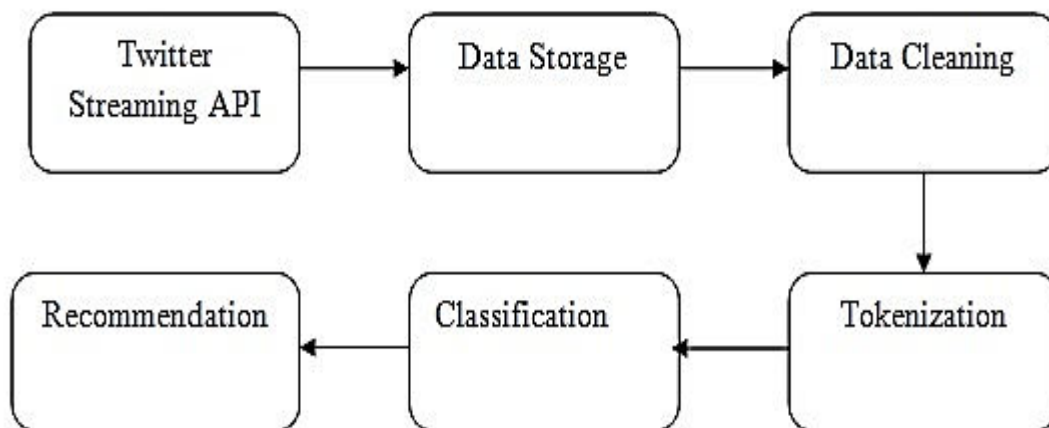


Figure 1: Sentiment analysis of Twitter streaming data for recommendation

1) **Data verification:** Data verification is not strong as it cannot be verified if the right person is accessing the data. To solve the existing security problems, cloud disk storage based on Hadoop is proposed, the program draw lessons from a security protocols like Kerberos' authorization process. The classic algorithms such as AES, RSA, blowfish for realizing encryption, and authentication are utilized, and time is checked to inspect if it can complete the encryption and transmission in an acceptable period.

2) Data Streaming:

The real time extracting tweets using Twitter Streaming API ,we are need Twitter data For classification. Data streaming is purpose of we make use of API's twitter provides. Twitter provides the two API's; Sample Stream API1 and Filter Stream API2. The difference between Sample Streaming API and Filter Streaming APIs are: Streaming API supports small and random sample connection and provides data in real-time. The Filter Stream APIs support keywords, user ID and location.

3) Data Storage:

In this phase, we can gather data for the online.

4) Data Cleaning:

In this phase, we can use a set of rule to remove the short tweets, non-English, same tweet sand garbage data. Remove Short tweets, we can send the text message used the short word that means instead of the remove. Remove non-English tweets, words in tweets are compared with common English words than other thresholds are remove [16]. Remove similar tweets, tweet are compare the every other tweet most of tweets are similar than tweet are remove.

IV. CONCLUSION

In this review paper survey is related to security issues on data isolation, intra-cloud data migration and inter-cloud data migration under the environment of a Private Storage Cloud extended with a Partner/Public Cloud. The security solutions based on the HDFS layer, with master/slave architecture, for the PSC are proposed. The performance analysis of them proves the efficiency of the security design.

A security encryption schemes based on Hadoop which satisfy the data transmission and storage security and satisfy the server executes digital signature for client data at the same time. It is a distributed encryption system that could reduce the burden on the server, and finally achieve security, stability, efficient and effective storage. The next research direction is to optimize the I/O efficiency of HDFS and ensure the scheduling security when executing the Map Reduce tasks in Hadoop. Hadoop uses Kerberos principals and key tabs for user authentication.

V. REFERENCES

- [1] A. froze Ibrahim Baqapuri, Saad Saleh , Muhammad U. Ilysa , Muhammad Murtaza Khan and Ali Mustafa Qamar “Sentiment Classification of Tweets using Hierarchical Classification” .In International joint conference on social networking, pages ,2016.
- [2] Andranik Tumasjan, Timm O Sprenger, Philipp G Sandner, and Isabell M Whelp. “Predicting elections with twitter: What 140 characters reveal about political sentiment”, In International AAAI Conference on Web logs and Social Media, pages 178–185, 2010.
- [3] H. Witten, E. Frank, and M. A. Hall. Data Mining: “Practical machine learning tools and techniques”. Morgan Kaufman, 2011.
- [4] S. Bird, E. Klein, and E. Loper, “Natural language processing with Python”. Reilly Media, Inc., 2009.
- [5] B. Pang, L. Lee and S. Vanity Nathan, “Sentiment classification using machine learning techniques”. In Proceedings of the ACL-02 Conference on Empirical Methods in Natural Language Processing- Volume 10, pages 79-86, 2002.
- [6] Y. Yamamoto, T. Kumamoto and A. Nadamoto, “Role of emotions for multidimensional sentiment analysis of twitter”. In Proceedings of the 16th International Conference on Information Integration and Web-based Applications 38; Services, pages 107- 115, 2014.
- [7] V. N. Khuc, C. Shivved, R. Namath, and J. Ramayana. “Towards building large-scale distributed systems for twitter sentiment analysis”. In Proceedings of the 27th Annual ACM Symposium on Applied Computing, pages 459-464, 2012.
- [8] J. Dean and S. Megawatt. “Mapreduce: Simplified data processing on large clusters”. In Proceedings of the 6th Symposium on Operating Systems Design and Implementation, pages 137-150, 2004.
- [9] L. Zhuang, F. Jing, and X.-Y. Zhu. “Movie review mining and summarization”. In Proceedings of the 15th ACM International Conference on Information and Knowledge Management, pages 43-50, 2006.
- [10] W. Zhang, C. Yu, and W. Men g. “Opinion retrieval from blogs”. In Proceedings of the Sixteenth ACM Conference on Conference on Information and Knowledge Management, pages 831-840, 2007.
- [11] T. Wilson, J. Wienie, and P. Ho Mann, “Recognizing contextual polarity in phrase-level sentiment analysis”. In Proceedings of the Conference on Human Language Technology and Empirical Methods in Natural Language Processing, pages 347-354, 2005.

- [12] T. Wilson, J. Wienie, and P. Ho Mann, "Recognizing contextual polarity: An exploration of features for phrase-level sentiment analysis". Com put. Linguist. Pages 399-433, Sept. 2009.
- [13] H. Yuh and V. Huitzilopitchli. "Towards answering opinion questions: Separating facts from opinions and identifying the polarity of opinion sentences". In Proceedings of the 2003 Conference on Empirical Methods in Natural Language Processing, pages 129-136, 2003.
- [14] S.M. Kim and E. Holy, "Determining the sentiment of opinions". In International Conference on Computational Linguistics, page 13-67. Association for Computational Linguistics, 2004.
- [15] Johan Boll en, Alberto Pepe, and Hui Mao. "Modeling public mood and emotion: Twitter sentiment and socio-economic phenomena". In International AAAI Conference on blogs and Social Media, pages 450–453, 2011.
- [16] Samuel Brody and Nicholas Diaphanous." Cool: Using word lengthening to detect sentiment in micro blogs". In Conference on Empirical Methods in Natural Language Processing, pages 562–570. Association for Computational Linguistics, 2011.
- [17] Chi-Chung Chang and Chi-Jen Lin." LIBSVM: A library for support vector machines". ACM Trans. In tell. Sys t. Technology., pages 278-289,May 2011.
- [18] T.M. Cover and J.A Thomas," Elements of Information Theory, volume 6. Wiley On-line Library".1991.
- [19] R.O. Duds, P.E. Hart, and D.G. Stork, "Pattern Classification". John Wiley & Sons, Inc., 2001.
- [20] Alec Go, Rich Hyannis, and Lei Huang. "Twitter sentiment classification using distant supervision". CS224N Project Report, Stanford, pages 1–12, 2009.
- [21] Pollyanna Gone, ales, Mathe us Ara'Ugo, Benedetto, and Shenyang Ch. "Comparing and combining sentiment analysis methods". In Proceedings of the first ACM conference on online social networks, pages 27–38. ACM, 2013.
- [22] Mark Hall, Elbe Frank, Geoffrey Holmes, Bernhard Infringer, Peter Minuteman, and Ian H Witting." The WEKA data mining software: An update". ACM SIGKDD Explorations Newsletter, pages 10–18, 2009.
- [23] CJ Hutton and Eric Gilbert. "Vader: A parsimonious rule-based model for sentiment analysis of social media text". In Eighth International AAAI Conference on Web logs and Social Media, 2014.
- [24] S.M. Kim and E. Holy, Determining the sentiment of opinions, In International Conference on Computational Linguistics, page 13-67. Association for Computational Linguistics, 2004.
- [25] E. Lumpishness, T. Wilson, and J. Moore." Twitter sentiment analysis: The Good the Bad and the OMG". In International AAAI Conference on Weblogs and Social Media, 2011.
- [26] Douglas M. McCain, Maurice Lorn, and Leo F. Templeman, "Profile of mood states". Educational and Industrial Testing Service, pages 254-352, 1971.

FOR CITATION

Sonawane, R., Palve, A. (2016) :: "Review On Sentiment Analysis Of Twitter Streaming Data For Recommendation Using Apache Spark" *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 6026-6031, Paper ID: IJIFR/V4/E4/071.

EFFECTIVENESS OF COOPERATIVE LEARNING ON CRITICAL THINKING SKILLS OF SECONDARY SCHOOL STUDENTS

Paper ID

IJIFR/V4/ E4/ 072

Page No.

6032-6040

Subject Area

Education

Key Words

Cooperative Learning, Jigsaw, Critical Thinking Skills

1 st	Dr.Pargat Singh	Assistant Professor, GHG Khalsa College of Education, Gurusar Sadhar (Punjab)
2 nd	Dr. Khushvinder Kumar	Principal, M.M. Modi College, Patiala (Punjab)

Abstract

The objective of the present paper was to study the effectiveness of Cooperative Learning (Jigsaw strategy) on Critical thinking skills of secondary school students. Total 116 students of class 9th studying in a school affiliated to P.S.E.B were taken as sample. Data was collected by using Critical thinking skill test developed by Singh and Kumar 2012. By employing 2x2 factorial design of ANCOVA results showed that students taught through cooperative learning strategy (Jigsaw)(Mean=19.04, N=57) achieved significantly higher Critical thinking skills as compared to traditional method of teaching(Mean=16.07, N=59). Critical thinking skills were found to be independent of interaction between treatment and gender.

I. INTRODUCTION

As many other countries across the world, India is in a process of educational reform involving a change of paradigm of educational practices in general and school education in particular. Adapting the concept of life skills given by WHO, our schools have focused on development of life skills among would be citizens. These life skills are an integral part of evaluation scheme in Indian schools. Critical thinking is a major component of these skills.

The reviews related to Critical thinking give an insight on the status of Critical thinking in the present Educational Scenario. CT is a meta-cognitive process that should be inculcated from the early adolescent stage only (Alpay, 2003). Critical thinking is always considered as an integral part of school curriculum. Recently implemented Continuous Comprehensive Evaluation system has made it mandatory for students and teachers to understand the concept of critical thinking. Few training programs are launched by the CBSE to train the faculty, but still teachers are not fully aware about- how to develop CT among students and how to evaluate their process in CT. Teachers, students and administrators are in flux to find out a suitable method to develop critical thinking skills. Lee et. al.(2000) and Kawashima and Petrini (2004) have also concluded that CT is a desirable educational outcome; so to develop and practice CT, educators need to re-consider course content and curricular strategies used to develop CT.

We are witnessing a shift from a teacher dominated classroom to student centred classroom. No doubt, now a day it is a common belief that good learning is learner-centred. But still in our schools, education is perceived as a narrow repertoire of ritualised classroom behaviours and only two skills are developed: memorisation and repetition. Teacher is the center of classroom who absolutely empower the class management and usually emphasize a memorization method in teaching. This restricts the students from developing analytical skills, opinion sharing and self learning. NCF-SE (2005) emphasised that knowledge should be constructed and the approach should be learner-centred. For this, we have to move away from traditional teacher centred methods of teaching to student centred methods like cooperative learning. Cooperative learning is not new; it has been around since the early 1900's when it was used in one room school houses. Cooperative learning is one of the most remarkable and fertile areas of theory, research, and practice in education. Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning. (Johnson, Johnson, & Holubec,1998). Although a number of Cooperative learning methods are applied in classroom teaching, a well-known and highly accepted method is Jigsaw, developed by Elliot Aronson. The jigsaw classroom is a cooperative learning technique with a three-decade track record of successfully reducing racial conflict and increasing positive educational outcomes. Just as in a jigsaw puzzle, each piece-each student's part - is essential for the completion and full understanding of the final product. If each student's part is essential, then each student is essential; and that is precisely what makes this strategy so effective (Elliot Aronson 2000-2013). In jigsaw, students of a normal-sized class are divided into groups of four to six students, each of which is given a list of subtopics to research. Individual members of each group then break off to work with the "experts" from other groups, researching a part of the material being studied, after which they return to their starting body in the role of instructor for their subcategory. The jigsaw strategy is a cooperative learning technique appropriate for students from 3rd to 12th grade. Aronson's (2007) list of Jigsaw steps (with some modifications) explains the process in more detail:

1. Depending on the size of the class, assign a number to students to their jigsaw group.

2. Appoint leader, secretary, time keeper from each group.
3. Brief introduction of the topic by teacher to whole class
4. Divide the lesson into segments to match the number of people in each group.
5. Assign one member of each group to learn each lesson segment and provide them expert sheets.
6. Give students time to work on step 5.
7. Gather students into 'Expert groups'. After one student from each jigsaw group joins other students assigned the same topic, again give them time to discuss their findings of step 5
8. Teacher will observe the whole process and move from group to group as a facilitator wherever needed. Oral questioning by teacher to assess accuracy of content in each expert group.
9. Bring the students back into their main groups. Once each presenter is ready, the jigsaw groups reassemble in their original Home Group and share what they've learnt in the expert group.
10. Each student will present a well-organized report to the Home Group. The expert in each group educates the group by teaching what they have learnt within the specialty group.
11. Secretary of the each group will present concluding report to the whole class.
12. At the end of the session, students are then tested through a quiz or a test
13. Teacher will conclude the lesson by re-teaching the material which he thinks has been misunderstood based on the individual assessment process.

Jigsaw technique, which is a greatly efficient teaching method, consists of challenging problems, participating student, and sharing their own opinions and ideas (Maritland, Latourelle, Valenti and Bookman, 2001).

Review of literature reveals that CT can be taught effectively through various ways like guided discovery Learning (Smitha and Rao, 2000); inquiry based curriculum (Lampert, 2005); quality instruction with home based remediation (Malhotra, 2006); problem based learning (Sims, 2008); collaborative activities (Synder and Synder, 2008) and Models of teaching (Robinson, 1996). Some studies have reported that learning through cooperative learning methods had positive effect on CT skills (Rabow et al., 1994; Wesp and Montgomery, 1998; Klimoviene et al., 2006; Riley and Anderson, 2006; Rumpagaporn and Darmawan, 2007; Rashtchi, 2007; Brooks, 2009; Raman, 2009; Guvenc, 2010). Cooperative learning has also shown significant effect on problem solving and higher order reasoning in meta analysis of 46 studies (Qin, 1995) and other higher order thinking skills (Johnson and Johnson, 1989). Few Studies in which Small group activities were used also reported significant improvement in critical thinking skills (Gokhale, 1995; Elliott, 1996; Hamann et al., 2012;). Interactive environment improves critical thinking (Wang et al., 2009). Gillies (2012) reported that teaching students to ask and answer questions is critically important if they are to engage in reasoned argumentation, problem-solving, and learning. Only three

studies have reported that Cooperative learning had no effect on CT skills (Abdulgani, 2003; Bokeoglu, 2009; Goyak, 2009).

II. OBJECTIVE OF THE STUDY

- To study the effect of cooperative learning (strategy), gender and their interaction on Critical thinking skills by taking Critical thinking skills as covariate.

III. HYPOTHESES

- There is no significant difference in the adjusted mean scores of Critical thinking skills of experimental (Jigsaw strategy) and control groups (lecture/discussion method) when pre scores of Critical thinking skills are taken as covariate.
- There is no significant difference in the adjusted mean scores of Critical thinking skills of boys and girls when pre scores of Critical thinking skills are taken as covariate.
- There is no significant effect of interaction between treatment and gender on the adjusted mean scores of Critical thinking skills when pre scores of Critical thinking skills are taken as covariate.

IV. RESEARCH METHODOLOGY

- i.) **Sample:** Random sampling technique was used to select the sample. The present study was conducted on 116 students of 9th class of Govt. high School Khasi Kalan, Ludhiana, affiliated to P.S.E.B Mohali. Both boys and girls were included in the sample for study.
- ii.) **Measure:**
 - Critical thinking skill test developed by Singh and Kumar (2012) was used to assess Critical thinking skills.
 - Cooperative learning Modules based on Jigsaw strategy were also prepared by the investigator.
- iii.) **Experimental Design:** The present study was experimental in nature. It was based on the lines of non equivalent Control group pre test-post test design.
- iv.) **Procedure:** The study was designed to find the effectiveness of Cooperative learning (Jigsaw strategy) on Critical Thinking Disposition. Permission was taken from principal of the school for conducting the experiment. In the first step Critical thinking skill test was administered to 116 students as pre test. Two intact section of 9th class were taken and randomly one was selected as experimental group and another as control group. One group was assigned randomly to the treatment. This was termed as experimental group and the other was termed as control group. The experimental group was taught social science subject through jigsaw strategy (with modules prepared by investigator) for a period of Forty days at the rate of 60 min. per day. On the other hand control group was taught social science with the help of conventional (lecture/discussion) method for a period of Forty days at the rate of 60 min. per day. After completion of the treatment Critical thinking skill test was administered to both the groups. The extraneous variables like influence and motivation of the teacher was controlled by teaching both groups by the investigator himself.

V. RESULTS

5.1 Descriptive Analysis on Scores of Critical Thinking Skills

The Mean and S.D. were calculated for post test scores and have been placed in table 1. The means have also been depicted through bar graph.

Table 1: Group wise Mean, S.D. and N values of boys and girls on post test scores of Critical thinking skills

	Experimental Group	Control Group	Total
Boys	M =18.97 N =35 S.D =3.41	M =15.31 N =35 S.D =2.59	M = 17.14 N = 70 S.D = 3.52
Girls	M =19.14 N =22 S.D =3.85	M =17.17 N =24 S.D =4.03	M = 18.11 N = 46 S.D = 4.02
Total	M = 19.04 N = 57 S.D = 3.55	M = 16.07 N = 59 S.D = 3.35	

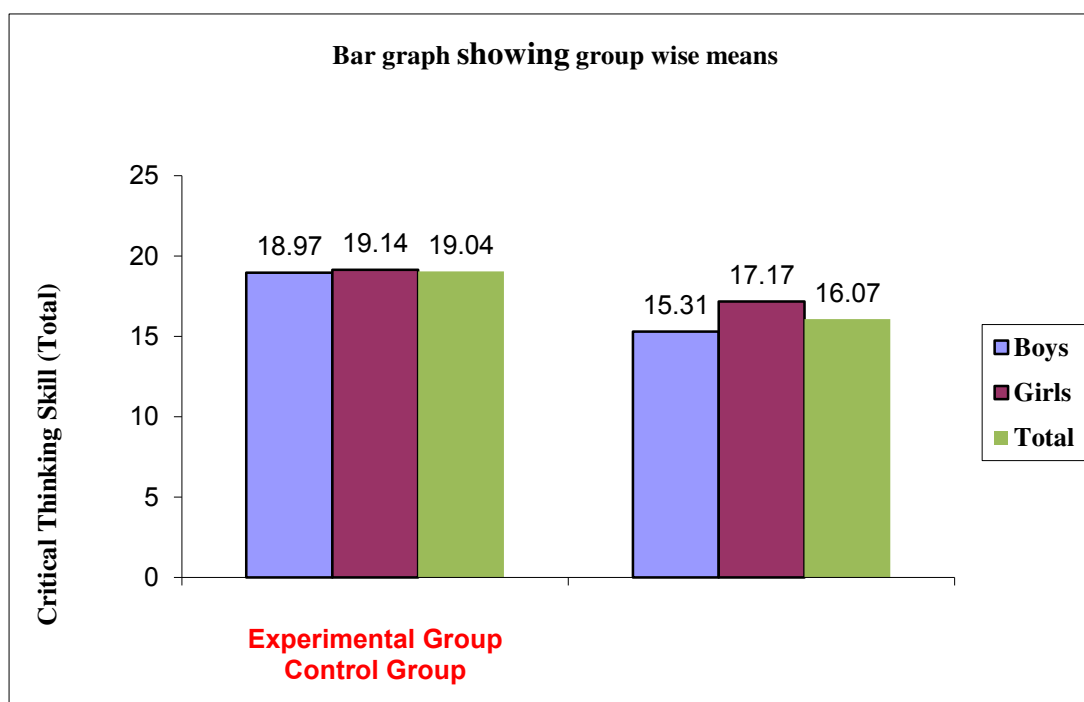


Figure 1: Bar graph showing group wise mean scores of critical thinking skills

From the table 1 and bar graph of the data, it was observed that mean score of the students of experimental group (N=57) was 19.04 with standard deviation 3.55 and mean score of the students of control group (N=59) was 16.07 with standard deviation 3.35. These values show that mean scores of students in experimental group were higher than that of students in control group. It may be noted from the table 1 that Mean score of Girls was 19.14, also higher than mean score of Boys 18.97.

5.2 Inferential Analysis

Before applying ANCOVA, Levene's test was used to check that data meets the homogeneity of variance test.

Table 2: Levene's Test of homogeneity of variance

F	df1	df2	Sig.
1.173	3	112	.323

Table 2 reveals that the value of Levene's statistic for test of homogeneity of variance is 1.173, which is not significant at .001 level with df 3/112. It indicates that there is no variance and groups are homogeneous. To study whether differences among means were statistically significant or not critical thinking skills scores were subjected to 2 x 2 ANCOVA. The results are given in Table 3

Table 3: Summary of 2x2 ANCOVA on adjusted mean scores of critical thinking skills

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Pre_CT	488.082	1	488.082	66.202	.000
SSA (Group)	112.213	1	112.213	15.220**	.000
SSB (Gender)	20.303	1	20.303	2.754	.100
SS A*B	7.828	1	7.828	1.062	.305
SS Error	818.356	111	7.373		
Total	37241.000	116			

**** Significant at .01 level**

It is evident from table 3 that reported F-value for adjusted mean scores of critical thinking skills is 15.22, which is significant at .01 level with df 1/111. It indicates that there is significant difference in adjusted mean scores of critical thinking skills between experimental and control group. Further, the adjusted mean score of experimental group taught by Jigsaw ($M=19.04 \pm 3.55$) was significantly higher than control group taught by Traditional Method ($M=16.07 \pm 3.35$). It may, therefore, be concluded that Jigsaw Method was significantly superior to Traditional Method in developing Critical thinking skills.

It is evident from the table 3 that reported F value for adjusted mean scores of critical thinking skills is 2.75, which is not significant even at .05 level. It means that there is no significant difference in adjusted mean scores of critical thinking skills between boys and girls students. It is evident from the table 3 that reported F value for interaction between group and gender is 1.06, which is not significant. It indicates that there is no significant difference in adjusted mean scores of critical thinking skills between boys and girls students belonging to both (experimental and control) groups.

VI. CONCLUSIONS

1. Critical thinking Skills of students taught by Jigsaw method of cooperative learning were significantly better than students taught with traditional method of teaching.

2. Gender differences were not found in Critical thinking Skills of students.
3. Critical thinking Skills of students were found independent of interaction between gender and group (teaching method).

VI. REFERENCES

- [1] Abdulghani, B. A. (2003). *An inquiry into the effects of cooperative learning on critical thinking and achievement in the Arabic language by female high school students in the United Arab Emirates*. The Pennsylvania State University, ProQuest, UMI Dissertations 3114806. Retrieved March 29, 2011 from <http://search.proquest.com/docview/305307594/abstract/14004EA5E0D31369EC0/2?accountid=2836>
- [2] Aggarwal, R. & Nagar, N., (2011). *Cooperative learning*. Delhi: Kalpaz Publications.
- [3] Aronson, E. & Pantone, S. (2011). *Cooperation in the classroom: The Jigsaw Method*. London: Pinter and Marten ltd.
- [4] Alpay-Altug, F.B. & Ozkan, I. (2003). *Parental Attitude and Critical Thinking Ability in Adolescents*. Retrieved on November 29, 2011 from <http://www.aile.selcuk.edu.tr/text/article4.htm>
- [5] Aronson, E. (2000-2013). *Jigsaw classroom: Overview of the Technique* retrieved from <http://www.jigsaw.org/overview.html>
- [6] Brooks, A. P. (2009). *Regular College Preparatory Students' Perceptions of the Student Teams Achievement Divisions Approach in an Academic College Preparatory Biology Class*. ProQuest LLC, Ed.D. Dissertation, Walden University. Retrieved on December 27, 2012 from the ERIC database (ED515758)
- [7] Bokeoglu, O. C. (2009). Teaching critical thinking skills by using introduction to statistics course content material to social sciences undergraduate in Turkey, *World Applied Sciences journal* 6(12) :1644-1649, 2009 ISSN 1818-4952
- [8] Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, 2,129-152. Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, Minn: Interaction Book Co.
- [9] Elliott, d. d. (1996). Promoting critical thinking in the classroom. *Nurse Educ.* 1996 Mar-Apr;21(2):49-52.PMID:8700430. Retrieved on January 29, 2012 from: <http://www.ncbi.nlm.nih.gov/pubmed/8700430>
- [10] Garcha, P.S. & Kumar, K. (2015). Effectiveness of cooperative learning on critical thinking dispositions of secondary school students. *Issues and Ideas in Education- refereed research Journal*, 3 (1), March, 2015, 55-62.
- [11] Gillies, R. M., Nichols, K., Burgh, G. & Haynes, M. (2012). The Effects of Two Strategic and Meta-Cognitive Questioning Approaches on Children's Explanatory Behaviour, Problem-Solving, and Learning during Cooperative, Inquiry-Based Science. *International Journal of Educational Research*, vol.53 p93-106 2012. Retrieved on March 24, 2012 from the ERIC database. (EJ988683)
- [12] Gokhale, A. A. (1995). Collaborative Learning Enhances Critical Thinking. *Journal of Technology Education* ISSN 1045-1064, Volume 7, Number1, Fall1995. Retrieved on November 16, 2011 from: scholar.lib.vt.edu/ejournals/JTE/v7n1/gokhale.jte-v7n1.html
- [13] Goyak, A. M. (2009). *The effects of cooperative learning techniques on perceived classroom environment and critical thinking skills of preservice teachers*. Liberty University,

- ProQuest, UMI Dissertations Publishing, 2009. 3352768. Retrieved on November 14, 2011 from: <http://search.proquest.com/docview/305138800/abstract/14004EA5E0D31369EC0/1?accountid=28367>
- [14] Guvenc, H. (2010). The Effects of Cooperative Learning and Learning Journals on Teacher Candidates' Self-Regulated Learning. *Educational Sciences: Theory and Practice*, vol10 no.3 p1477-1487. Retrieved on May 14, 2011 from the ERIC database. (EJ919859)
- [15] Hamann, K., Pollock, P. H. & Wilson, B. M. (2012). Assessing Student Perceptions of the Benefits of Discussions in Small-Group, Large-Class, and Online Learning Contexts. *College Teaching*, v60 n2 p65-75 2012. Retrieved from the ERIC database. (EJ965394)
- [16] Johnson, D. W. & Johnson, R. T. (1989). *Cooperation, a form of collaboration, is working together to accomplish shared goals*. Retrieved on November 21, 2010 from: <http://www.aect.org/edtech/ed1/35/35-03.html>
- [17] Johnson, D., Johnson, R. & Holubec, E. (1998). *Cooperation in the classroom*. Boston: Allyn and Bacon.
- [18] Johnson, D. W. & Johnson R.T., & Stanne, M. B. (2000). *Cooperative learning methods: a Meta analysis* retrieved from <http://www.clcrc.com/pages/cl-methods.html>
- [19] Kawashima, A. & Petrini, M. (2004). Study of critical thinking in nursing students and nurses in Japan. *Nurse Education Today* ; 24(4): 286-92. In Doaa A. E., Zinat I. E. H., Shadia A. A. D. & Eman, E. T. (2011). *Preferred Educational Strategies and Critical Thinking Dispositions among Nursing Students*. Retrieved on March 19, 2011, from: http://www.jofamericanscience.org/journals/am-sci/am0705/54_5423am0705_406_416.pdf
- [20] Klimoviene, G. & Statkeviciene, S. (2006). *Using Cooperative Learning to Develop Language Competence and Social Skills*. *Studies about language*. No. 8 issn 1648-2824. Retrieved on January 12, 2011 from http://www.kalbos.lt/zurnalai/08_numeris/11.pdf
- [21] Lee, D., Chauj, P., Wotton, Y. & Chang, A. (2000). Disposition toward Critical Thinking: a study of Chinese undergraduate nursing students. *Journal of Advanced Nursing*; 32(1): 84-90. in Doaa A. E., Zinat I. E. H., Shadia A. A. D. & Eman, E. T. (2011). *Preferred Educational Strategies and Critical Thinking Dispositions among Nursing Students*. Retrieved from: http://www.jofamericanscience.org/journals/am-sci/am0705/54_5423am0705_406_416.pdf
- [22] Riley & Anderson (2006). Randomized Study of the Impact of Cooperative Learning: Distance Education in Public Health. *Quarterly Review of Distance Education*, vol. 7 (2) p129-144. Retrieved from the ERIC database.(EJ875028)
- [23] Maitland, L., Latourelle, S., Valenti, J. & Bookman, B. Jigsaw. (2001). Available online at <http://www.dde.Edu/~flccjigsaw.html>
- [24] Malhotra, R. (2006). *Impact of quality instruction with home based remediation and parental involvement on life skills of 5th graders*. An unpublished Ph.D thesis in Panajb University Chandigarh
- [25] Qin, Z., Johnson, D. W. & Johnson, R. T. (1995). Cooperative versus competitive efforts and problem solving. *Review of Educational Research*, 65(2),129-143. In Santosh(2012). *A Comparative Study of the Effectiveness of Student-Teams Achievement Divisions (STAD) and Jigsaw Methods of Cooperative Learning*. An Unpublished Doctoral Thesis, M.D. University, Rohtak

- [26] Rabow, J. Charness, M.A, Kipperman, J., Radcliff- Vasile, S. (1994). William Farcett Hills Learning through discussion (3rd Ed.) CA: Sage
- [27] Raman, T. (2009). Collaborative Learning in the Dance Technique Class. *Research in Dance Education*, v10 n1 p75-87 Mar 2009. Retrieved from the ERIC database. (EJ830081)
- [28] Rashtchi, M. (2007). A pathway toward critical thinking through cooperative writing in an English college course in Iran. *Near and Middle Eastern Journal of Research in Education: Vol.21, pp.1-11*. DOI: 10.5339/nmejre.2007.2.1. Published online: 11 Nov 2010 : <http://www.qscience.com/doi/abs/10.5339/nmejre.2007.2.1>
- [29] Robinson, S. (1996). *Teaching critical thinking at the community college*. Retrieved on November 12, 2011 from <http://www.middlesex.mass.edu/TitleIII/ctr.asp>
- [30] Rumpagaporn, M. W. & Darmawan, I. G. N. (2007). Students' Critical Thinking Skills in a Thai ICT Schools Pilot Project. *International Education Journal*, v8 n2 p125-133 Nov 2007. Retrieved from the ERIC database (EJ834154)
- [31] Sims, M. G. (2008). *Efficacy of problem-based learning in promotion of critical Thinking in online graduate courses*, An Unpublished Doctoral thesis UMI No. 3342225 Capella University
- [32] Smitha, V. P. & Rao, P. M. (2000). Effectiveness of Guided Discovery Learning on Critical Thinking of Secondary School Students, *School Science*, March 2000,p 50-56
- [33] Slavin, R. E.(1991). Synthesis of research on cooperative learning. *Educational leadership* 48,71-82.
- [34] Singh, P. (2009). *Effect of participative classroom climate on achievement in relation to their learning Approaches*. An unpublished M.Ed dissertation, PU Chandigarh
- [35] Slavin, R. E. (1994). *Using Student Team Learning* (4th ed.). Baltimore: John Hopkins University. As reported in Slavin, R. E. (1995). *Educational Psychology: Theory and Practice*. Boston: Allyn and Bacon.
- [36] Snyder, L. & Snyder, M. J. (2008). *Teaching Critical Thinking and Problem Solving Skills*. Retrieved on February 28, 2012 from the ERIC database.(EJ826495)
- [37] Wesp, R. & Montgomery, K. (1998). Developing Critical Thinking through the Study of Paranormal Phenomena. *Teaching of Psychology*, v25 n4 p275-78 Nov 1998. Retrieved from the ERIC database (EJ584734).

FOR CITATION

Singh, P. , Kumar, K. (2016) :: “Effectiveness Of Cooperative Learning On Critical Thinking Skills Of Secondary School Students” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 6032-6040, Paper ID: IJIFR/V4/E4/072.

A STUDY ON ACHIEVEMENT MOTIVATION OF UNIVERSITY STUDENTS IN RELATION TO THEIR LEARNING STYLES

Paper ID

IJIFR/V4/ E4/ 061

Page No.

6041-6045

Subject Area

Education

Key Words

Achievement , Motivation And Learning Style

1 st	G. Satyanarayana	Research Scholar, Department of Education Gulbarga University, Kalaburgi -Karnataka
2 nd	Dr. Hoovinabhavi B. L.	Professor Department of Education, Gulbarga University, Kalaburgi-Karnataka

Abstract

Academic success is strongly influenced by individual differences like achievement motivation, learning styles. The aim of the study is to explore the relationship between achievement motivation and different styles of learning among university students. The sample comprised of 100 students of Gulbarga University, Kalaburgi. in which 50 male students and 50 female students participated. The tools used were Achievement Motivation Scale (n-ach) (1971) by Pratibha Deo and Asha Mohan was used to collect the data. F test is used. and Learning Style Inventory (1971) developed by K.S Mishra. The findings revealed that there is no significant relationship between the reproducing dimension of learning style and achievement motivation of university students. Where, there is significant relationship between the learning style and achievement motivation among university students. Finding reveals that significance relationship is found in Gender & locality in relation to learning styles and achievement motivation.

I. INTRODUCTION

Every individual has universal tendency to strive that can be called motive which avoid failure but tries to achieve. Those who engage themselves in a task on account of an achievement motive are said to work under the spirit of achievement motivation. Achievement motivation is an essential element which affects the behavior of an individual. Achievement motivation is a drive to do well. The achievement drive in fact required to large extent for success in any field. Achievement geared person is one who sincerely tries

to improve the conditions of life. As almost any activity, from gardening to managing an industrial organization, can be viewed in terms of competition and success versus failure, the need to achieve influences behavior in a large number of diverse situations, and because it is a learned motive, there are wide differences among individuals with respect to achievement. It is this difference in the strength of motivation to achieve that is important in understanding the development of the child. Both achievement motivation and motivation for competence are useful but effort is essential to accomplish both and learning probably comes faster to persons with high achievement motivation than to those with low achievement motivation.

II. REVIEW OF RELATED LITERATURE

- Chaturvedi (2009) examined the effect of school environment on achievement motivation and academic achievement of 300 students of Bhopal. The results showed positive significant correlation between academic motivation and achievement of students
- Aswan et al. (2011) examined the academic relationship with achievement motivation and self-concept of 336 students of Sargodha district. The results revealed the achievement motivation and self-concept were significantly related to academic achievement.
- Rozalina et al. (2013) studied the learning style and academic achievement among arts and science streams of 100 school students of west Malaysia. Respondents preferred the dependent learning style followed by co-operation in all the variables namely gender, class, ethnic, family income and students academic achievement.
- Gunes (2014) studied learning style preferences of 367 students of Gazi University and explored the relationship between student's learning styles preferences and their achievement. So, there is a relationship between the teaching strategies of the teacher and the learning preferences of the students. Concept of learning style is important for learners, teachers, parents, guidance workers, administrators and planners.

III. OBJECTIVES

- 1) To study the achievement motivation of the university students.
- 2) To know the relationship between achievement motivation and learning styles of university students.
- 3) To determine the relationship between learning styles and achievement motivation of university students.

IV. HYPOTHESIS

1. There will be no significant difference between students of Rural and Urban areas in respect to learning styles
2. There will be no significant difference between male and female students in respect to learning styles.

3. There will be no significant difference between students of Rural and Urban areas in respect to achievement motivation.
4. There will be no significant difference between male and female students in respect to achievement motivation.
5. There will be no significant relationship between students of Rural and Urban areas and gender in respect to learning styles.
6. There will be no significant relationship between students of Rural and Urban areas and gender in respect to achievement motivation.

V. RESEARCH METHODOLOGY

A descriptive survey method was used to collect data regarding achievement motivation of students in relation to their learning styles.

Sample

In the present study, the sample was randomly selected. The total sample consisted of 100 in which 50 male and 50 female students of Gulbarga University.

Administration of Tools

Tools For the present study two different tests are used

1. Learning Style Inventory (1971) developed by K.S Mishra. Reliability of the scale was established by test retest method in which coefficient was found to be 0.98 & 0.80 for internal consistency. Validity found to be 0.69.
 2. Deo Mohan Achievement Motivation scale was developed by Deo Mohan (2002). Total item consisted of 50 in this scale. The Reliability is found 0.67 & Validity is 0.75.
- Research Design In this research to test the relation of Gender & status of the students in relation to learning styles & achievement motivation, two tests were used. Each selected student from the sample was tested for the two tests & scored as per manual of each test.

VI. MAJOR FINDINGS

Table 1 : Showing Main & Interaction Effect of learning styles

Source	Sum of Score	Mean Score	Df	F	Significance
GENDER	876.160	876.16	1	117.73	Sig
LOCALITY	739.840	739.840	1	94.41	Sig
GENDER X LOCALITY	10.240	10.24	1	1.37	N.S
ERROR	714.400	7.44	96		
TOTAL	114164.00	100	0		
CORRECTED TOTAL	2340.640		99		

Present study is carried out to examine achievement motivation and learning styles of university students. As can be seen from the table F ratio for gender is 117.73 which show highly significant relationship. The mean score for male students is 36.40 and for female students is 30.48. Male students are on the higher side on learning styles then the female students. So the Hypotheses is rejected. It shows that there is difference between male & female students on learning styles. So far as locality is concerned the F ration is 94.41 also

shows significant relationship mean score for students of urban area is 36.16 & for students of rural area is 30.72. This Students of Urban area is on the higher side on learning styles then students of rural area. The interaction effect do not found significant relationship.

Table 2 : Showing Main & Interaction Effect of Achievement Motivation.

Source	Sum of Score	Mean Score	Df	F	Significance
GENDER	34856.89	34856.89	1	451.616	Sig
LOCALITY	412.09	412.09	1	5.339	Sig
GENDER X LOCALITY	1204.09	1204.09	1	15.601	Sig
ERROR	7409.52	7.44	96		
TOTAL	1995771.00	100	0		
CORRECTED TOTAL	43882.590		99		

For Achievement Motivation F ratio of gender was found to be 451.616, which is highly significant. It suggests that there is difference in achievement due to gender of the students. Mean score for male is 158.38 and for female is 121.04.

This shows significant relationship between male and female. Male is on the higher side then female. From the higher mean score of male students one can definitely say that males are having different achievement motivation compared to female.

Calculated F value of gender was also found to be 451.616, which is quite significant. So hypothesis is rejected. Hypotheses show that there is a difference in Student's achievement motivation due to their gender.

So far as locality is concern F ratio for locality is concern 5.339. This also shows significant relationship. The mean score for students of urban area is 141.74 and for students of Rural area is 137.68 which also shows significant relationship between locality. Students of urban area are on the higher side on achievement motivation than students of rural area.

So far as interaction of gender and locality is concern F value is 15.601 which show significant relationship. That proves there is difference in achievement motivation due to interaction of Gender and locality among college students.

- i.) Significant difference is found in male & female students in relation to learning styles.
- ii.) Significant difference is found in locality of the students in relation to learning styles.
- iii.) There is no significant difference found in interaction effects in relation to learning styles.
- iv.) Significant difference is found in gender & locality in relation to Achievement Motivation.

VII. CONCLUSION

University students had low Achievement Motivation because majority of students had Achievement Scores lower than mean score. The constructive dimension of learning style is significantly related to achievement motivation of university students. There were no significant relationship between the reproducing dimension of learning style and achievement motivation of university students. So, teachers can make use of various tactics, methods, life situation, teaching techniques to improve achievement motivation of students. The present study may help to develop the intricate relationship between the teaching strategies of the teacher and the learning preferences of the students.

VIII. REFERENCES

- [1] Alderman MK. Motivation for Achievement Possibilities for Teaching and Learning. New Jersey: Lawrence Erlbaum Associates Inc, 2004.
- [2] Atkins AM. What is Learning Style? Retrieved from, 2006. <http://www.ncsu.edu/fey/current/curriculum/worksheets/1-styles.pdf> on April 2012.
- [3] Aswan, Riffal-ul-Nisa, Ghazala N, Anjum N. A Study of Relationship between Achievement Motivation and Self Concept and Achievement in English and Mathematics at Secondary Level, International Education Studies, 2011, 4(3).
- [4] Barzegar M. The Relationship between Learning style, Locus of Control and Academic Achievement in Iranian Students. International Proceeding of Economic and Research, 2011, 13,195-199.
- [5] Chaturvedi M. School Environment, Achievement Motivation and Academic Achievement. Indian Journal of Social Science Researches, 2009; 6(2), 29-37.
- [6] Tan LM, Laswad F. Exploring the Impact of Students Learning Style on Performance in Taxation. Journal of the Australia Tax Teacher Association, 20

FOR CITATION

Satyanarayana, G. , Hoovinabhavi, B. L. (2016) :: “A Study On Achievement Motivation Of University Students In Relation To Their Learning Styles”
International Journal of Informative & Futuristic Research (ISSN: 2347-1697), Vol. 4
No. (4), December 2016, pp. 6041-6045, Paper ID: IJIFR/V4/E4/061.

EXPERIMENTAL INVESTIGATION OF SLIDING WEAR AND TENSILE BEHAVIOR OF AL27 REINFORCED WITH SICP AND GRAPHITE HYBRID METAL MATRIX

Paper ID	IJIFR/V4/ E4/ 020	Page No.	6046-6055	Subject Area	Mechanical Engineering
Key Words	Hybrid Reinforced Composite Material, Tribological Properties, Aluminum Alloy, Reinforcing Hard Sicp, AL27, Graphite Panicles, Taguchi Technique, Ceramic Mixed Mechanical Layer, Dry Sliding Wear Resistance				

1 st	Sandeep Shejul	M.E. Student Department of Mechanical Engineering Pravara Rural Engineering College, Loni-Maharashtra
2 nd	Dr. Y.R. Kharde	Professor Department of Mechanical Engineering Pravara Rural Engineering College, Loni-Maharashtra

Abstract

In the present work the sliding wear behavior AL-27 With SiCp, Gr and magnesium Will be evaluated using pin on disc apparatus and Taguchi technique was use to estimate the parameters affecting the wear significantly. And same specimen will be test for tensile test and study the parameter affecting the tensile test. And study the mechanical as well as tribological properties. Dry sliding wear behavior of zinc based alloy and composite reinforced with SiCp (10 to 20 wt %) and Gr (3 wt %) fabricated by powder metallurgy method was investigated. Heat treatment (HT) and aging of the specimen were carried out, followed by water quenching. Wear behavior was evaluated using pin on disc apparatus. Taguchi technique was used to estimate the parameters affecting the wear significantly. The effect of HT was that it reduced the micro cracks, residual stresses and improved the distribution of micro constituents. The influence of various parameters like applied load, sliding speed and sliding distance on wear behavior was investigated by means and analysis of variance (ANOVA). Further, correlation between the Parameters was determined by multiple linear regression equation for each response. It was observed that the applied load

significantly influenced the wear volume loss (WVL), followed by sliding speed implying that increase in either applied load or sliding speed increases the WVL. Whereas for composites, sliding distance showed a negative influence on wear indicating that increase in sliding distance reduces WVL due to the presence of reinforcements. The wear mechanism of the worn out specimen was analyzed using scanning electron microscopy. The analysis shows that the formation and retention of ceramic mixed mechanical layer (CMML) plays a major role in the dry sliding wear resistance. The bearing characteristics of AL-27/graphite composite materials with graphite particle content varying from 2-3 Wt. % in steps of 2% have been investigated under lubricated. The composite materials were fabricated employing the powder metallurgy techniques. Graphite panicles of size 80-120 pm were used to reinforce the AL-27 alloy.

I. INTRODUCTION

Life of machine component is an important design consideration. of Various parameters affect the life of components and the selection of material directly influences the life significantly. The choice of material for a particular application varies depending on the variables like cost, density, specific strength, modulus and operating condition. The majority of engine components, gear drives and so on in automotive and aerospace industries utilize metals and alloys. The sliding and rotating components intended to work in lubricating conditions may eventually end up working in semi-lubricated or dry conditions. This will result in higher operating temperature with increase in wear and lead to quicker replacement of components. Hence, wear is one of the major problems that need to be tackled in order to improve the life of the component. Composite materials are the promising alternate for alloys, specifically in dry operating conditions. Current work concentrates on the development of a hybrid reinforced composite material that can improve the wear resistance in components. Historically addition of reinforcements has shown significant improvement in tribological properties.

However, in some instances it has shown deterioration in mechanical properties. as the percentage of SiCp was increased, UTS and hardness increased with reduction in ductility. Mechanical and micro structural properties of discontinuously reinforced metal matrix composites (DRMMCs) reinforced with SiCp, graphite (Gr), alumina (Al₂O₃), zircon particles are reported by various researchers. Reported that with the increase in composition of SiCp, significant increase in ultimate tensile strength (UTS) and hardness, with reduction in ductility and impact strength was observed. Heat treatment gave reverse results by reducing UTS and hardness, with increase in ductility and impact strength. found that, inclusion of smaller Al₂O₃ improved the strength than the larger particle size and as-cast alloy. Zircon particles were reinforced with AL-27. That showed an improvement in UTS, yield strength (YS), hardness and Young's modulus of composite, with a decrease in ductility and impact strength as the particulate percentage was increased. Friction is the

natural phenomenon of resistance to motion between mating surfaces. It is a serious cause of energy dissipation and considerable savings can be made by reducing it. Friction is not an intrinsic material property but a characteristics feature of the engineering system. Any change in load. Speed or environmental conditions may cause catastrophic changes in wear rate to one or both the mating surfers. Particle distribution in the matrix material during the melt stage of casting process depends on the viscosity of the slurry, the extent to which particles can be successfully incorporated in the melt. The characteristics of the reinforcement particles themselves influence the settling rate and the effectiveness of mixing in breaking up agglomerates, minimizing gas entrapment and distributing particle.

Current work concentrates on the development of a hybrid reinforced composite material that can improve the wear resistance in components. Historically addition of reinforcements has shown significant improvement in tribological properties. However in some instances it has shown reduction in mechanical properties.

Aluminum alloy is a competitive bearing alloy that shows improvement in both mechanical and tribological properties compared with pure AL-27. The density of the latter are much higher compared with the former element. AL alloy exhibits superior wear resistance at low speed-high load application even in the dry condition, while there is a decline in wear resistance with increase in speed and rise in temperature. Some people performed dry sliding wear behavior of AL-27 alloy reinforced with Gr particles. These composite specimens exhibited enhanced wear resistance than the alloy. The smeared Gr particles formed a Protective layer on the specimen. Applied load was directly proportional to the wear rate for both alloy and composite specimen, while variation in sliding speed showed contrast results in composite specimen .The hardness decreased with the addition of graphite as it is a soft inclusion. Reinforcing hard SiCp into soft aluminum alloy improves the wear resistance as well as hardness of the composite material. Composites with increased volume fraction, hardness and larger reinforcement size increase the wear resistance. Particle pulls out and fracture was the mechanism observed for smaller and larger reinforcement size respectively. In a three step by step increase in applied load increased the wear rate, whereas a contrast result was achieved in case of sliding speed by where the wear rate decreased with increase in speed. The increase in SiCp content improved the hardness which reduced the wear rate significantly. Composites reinforced with SiCp exhibited superior wear resistance over the alloy as fractured particles ensured the participation in wear behavior avoiding the exposure of alloy.some people showed that incorporation of SiCp in Al alloy improves the wear resistance at higher load and speed compared to the plain AL alloy.[11]Ranganath evaluated the dry sliding wear behavior of AL-27 composite and concluded that, increasing garnet content improved the wear resistance. Meanwhile the wear resistance dropped with an increase in applied load and sliding speed. Inclusion of only graphite as reinforcement improved wear behavior (as 3%Wt) reducing hardness (soft inclusion) while SiCp inclusion showed improvement in both wear and hardness. The attempt to obtain the combined effect of solid lubrication and improved hardness attributed to the creation of hybrid composites. The effect of sliding

speed in deciding the wear behavior of hybrid composites was evaluated by It was witnessed that, the specimen experienced higher wear rate followed by seizure behavior at higher speeds for alloy while there was a minor effect of increase in speed for hybrid composite reinforced with SiCp and Gr, Mg, MOS₂. On the contrary, that as sliding speed was increased, wear loss was reduced for different combinations of SiCp and Gr. Hardness reduces with inclusion of Gr particles in Al-SiCp composite specimen Basavarajappa used Taguchi's technique to identify the influence of wear parameters and concluded that sliding distance is the major contributor followed by applied load and sliding speed. Graphite plays an important role in the formation of mechanical mixed layer (MML). Several researchers studied the heat treated AL-27 alloy followed by water quenching to investigate the hardness, tensile and wear behavior. Heat treatment to AL-27 alloy improved the distribution of micro cracks Heat treatment resulted in reduction of the hardness and tensile properties but had a positive effect on the dry sliding wear behavior. The specimen heat treated for 5h and aged for 8 h showed superior wear behavior over other heat treatment and aging conditions. The addition of solid lubricant (Gr) with SiC particles in Al alloy proved to be positive on the dry sliding wear behavior. A detailed study on the formation of mechanical mixed layer (MML) and its advantages on the worn surface of the specimen were presented A statistical approach was used to find out the significance of the factors affecting the wear behavior of hybrid MMCs.

Table 1: Chemical composition of matrix alloy AL-27

Chemical composition	Wt %
AL-27	50-70
SiCp	10-20
Gr	3
MoS ₂	3
Mg	2
Region	10-20

Table 2: Composition of Al-27 Alloy.

Material	%
Copper	0.2 max
Magnesium	0.2-0.6
Silicon	6.5-7.5
Iron	0.5 max
Manganese	0.3 max
Nickel	0.1 max
Zinc	0.1 max
Lead	0.1 max.
Tin	0.05 max
Titanium	0.2 max.
Aluminium	Remainder
Others: each	-
Others: total	0.15 max.

Applications of composite AL27 alloy.

- High temperature spray nozzle.
- Journal Bearing.
- Piston ring material.
- Brake pad.
- Automotive Applications.

II. LITERATURE REVIEW

1. **SC. Sharma** et al(1998)the composite materials were fabricated employing the liquid Metallurgy Technique Graphite panicles of size 80-120 pm were used to reinforce the ZA-27 alloy. The bearing tests were conducted using a computer interfaced earing test rig, he was found that in the tests conducted, the bearing fabricated from the composite materials exhibited low friction in comparison with the unreinforced ZA-27 alloy. In the oil-lubricated test. the composite bearings were able to run without seizure up to the regimes of boundary lubrication with less friction. The base alloy bearings could also operate in the boundary lubrication. But under higher friction. In the semidry and dry tests. The composite bearings exhibited lower friction which further reduced with increase in the graphite content, but increased with load. In the semidry and dry tests. The alloy bearings seized at much lower loads than the composite bearings. The composite as well as the alloy bearings tested under lubrication exhibited least coefficient of friction in comparison with those tested under semidry and dry LSIS.[1]
2. **T. Sava,skanet** al (2002) All of the zinc-based alloys had higher wear resistance than the SAE 660 bronze. Among the zinc-based alloys, the wear resistance of the monotectoid-based alloys was superior to those based on near-eutectoid composition, and the best wear performance under both static and dynamic loading conditions was obtained with ZnAl40Cu2Si1 alloy. Copper content affected the wear resistance of monotectoid zinc-based alloys. Under dynamic loading conditions, it increased with increasing copper content up to 2%, but declined thereafter. Tensile properties and hardness of the monotectoid alloys were also affected by their copper content. The bearings produced from the zinc-based alloys exhibit higher wear resistance than the bearings produced from bronze. These bearings appear to be good alternatives to the bronze bearings during operation under both static and dynamic loadings. Under static loading conditions, the as-cast zinc-based alloys showed higher wear resistance than the same alloys in the heat-treated condition.[2]
3. **B.M. Viswanatha** et al (2014) It was observed that the applied load significantly influenced the wear volume loss (WVL), followed by sliding speed implying that increase in either applied load or sliding speed increases the WVL. Whereas for composites, sliding distance showed a negative influence on wear indicating that increase in sliding distance reduces WVL due to the presence of reinforcements. The wear mechanism of the worn out specimen was analyzed using scanning electron microscopy. The analysis shows that the formation and retention of ceramic mixed

mechanical layer (CMML) plays a major role in the dry sliding wear resistance. Dry sliding wear behavior of zinc based alloy (Al 27) and composite reinforced with SiCp (9 wt%) and Gr (3 wt%) fabricated by stir casting method was investigated. The addition of solid lubricant (Gr) as secondary reinforcement along with SiCp improves the wear resistance by forming a CMML on the contact geometry. The formation and retention of CMML acts as a protective layer, thereby reducing the wear volume loss in case of composites. The size of wear debris that emerged out of wear specimen demarcated the severity of wear in alloy while fine wear debris showed mild wear in composites.[3]

4. **Veerabhadrapa Alguet al (2014)** Taguchi method provides a systematic and efficient methodology for the design and optimization of wear rate parameters with far less effort than would be required for most optimization techniques. To improve the tribological property of ZA-27 alloy by adding 1% Mn alloy. The wear behaviour of the modified ZA-27 alloy was studied by performing dry sliding wear test using pin-on-disc. To improve the tribological property of ZA-27 alloy by adding 1% Mn alloy. The wear behaviour of the modified ZA-27 alloy was studied by performing dry sliding wear test using pin-on-disc.[6]
5. **J. Anet al (2004)** Using these techniques, a large amount of lead can be incorporated in an aluminum matrix, with the subsequent solidified Al–Pb alloys exhibiting a microstructure of fine soft lead particles homogeneously dispersed in the mechanically strong aluminum matrix. Using these techniques, a large amount of lead can be incorporated in an aluminum matrix, with the subsequent solidified Al–Pb alloys exhibiting a microstructure of fine soft lead particles homogeneously dispersed in the mechanically strong aluminum matrix. At room temperature the hot extruded Al–Si–Pb alloys demonstrated better wear resistance than the base alloy. The wear rate decreased with lead content, with the effect being most prominent with the alloys containing 20 and 25% lead. The presence of a plateau phenomenon in the wear rate curves of the higher lead content alloys is attributed to a film of lubricant covering almost the entire worn surface. The film was determined to be a mixture of different constituents containing Al, Si, O, Fe and Pb.[4]
6. **T.S. Arjun, et al (2004)** It was observed that the wear rate is a function of contact load, sliding speed, composition and thermal softening characteristics of sliding metal the influence of copper on wear-friction behavior of hypereutectic Al–Si alloy (Al–18% Si–0.5% Mg) has been investigated. Sliding tests were conducted under dry sliding conditions against hardened steel En-31 counter surface over a range of sliding speed from 2.0 to 7.0 m/s and contact load from 10 to 80 N. Addition of copper does not affect the oxidative wear resistance appreciably at low loads; however, alloy with higher percentage of copper (3–5%) is subjected increased wear rate especially at higher loads. Increase in load increases the wear gradually in mild wear regime and beyond certain critical load (transition load) wear increases abruptly.

III. SCOPE AND OBJECTIVE OF RESEARCH

3.1 Scope

Nowadays, finding ways to develop new structural materials with higher strength to weight ratios is one of the biggest challenges in the transportation and aerospace industry. Properties like high specific strength, stiffness, better wear resistance and improved elevated temperature properties compared to the conventional metals and alloys are the key reasons for the increasing attention towards Metal Matrix Composites (MMCs).

The present work is carried out to get information and do comparative study about friction and wear behavior, of (journal bearing), Al cast alloy and Al cast alloy-Sicp (10%, 15% and 20%) metal matrix composite as pin materials against grey cast iron as disc material having chemical composition similar to that of casing of bearing of actual application in water feed pump bearing pin on disc apparatus. In area of research the study of composite at elevated temperature is carried out so as to know the characteristics of material under study & its effect on rotating performance.

3.2: Objectives of project

The main aim of this project is to check wear rate and mechanical as well as tribological properties of the Aluminium based silicon carbide metal matrix composite(MMC)

- To get information and do comparative study about friction and wear behavior of journal bearing, Al cast alloy and Al cast alloy-Sicp (10%, 15% and 20%) metal matrix composite as pin materials against grey cast iron as disc material having chemical composition similar to that of Casing of actual journal bearing on pin on disc apparatus
- To conduct wear test of pin materials by varying normal load, sliding speed and sliding distance know the results
- To study effect of temperature on wear, coefficient of friction for pin materials
- To carry out Scanning Electron Microscopy of pin samples
- To conduct a tensile test as per ISO standard (ISO-6892-1-2009) and compare with plain AL-27.Validation using Scanning Electron Microscopy (SEM) study of samples before and after wear test.

IV. EXPERIMENTAL ANALYSIS

4.1 Experimental Condition

Hardness is measured by using the Brinell Hardness Tester (B scale).Hardness is measured before and after the extrusion process. It is measured at three different places on the billets and average value is taken for final readings. Measurement of hardness is shown in the figure 1. Observation Table of experimental condition is given below.

Table 3: Hardness of samples

Sr.No	Material	Hardness
1	Al-27	80
2	Al-27 +10% SiCp	112.28
3	Al-27 +15% SiCp	120.10
4	Al-27 +20% SiCp	129.18



Figure 1: Hardness Measurement

4.2 Experimental Methodology

For the evaluation of tribological characteristic of materials under study was carried out on pin on disc apparatus (pin heating machine) TR20PHM400.

4.3 Results of Statistical Analysis of Experiments

The experimental results were analyzed with Analysis of Variance (ANOVA) which is used to investigate the influence of the considered wear parameters namely; applied load, sliding speed, and sliding distance that significantly affect the performance measures. By performing analysis of variance, it can be decided which independent factor dominates over the other and the percentage contribution of that particular independent variable shows 10%,15%,20% SiCp respectively MMCs of the ANOVA results for wear rate and coefficient of friction for three factors varied at three levels and interactions of those factors. This analysis is carried out for a significance level of $\alpha=0.05$, i.e. for a confidence level of 95%. Sources with a P-value less than 0.05 were considered to have a statistically significant contribution to the performance measures.

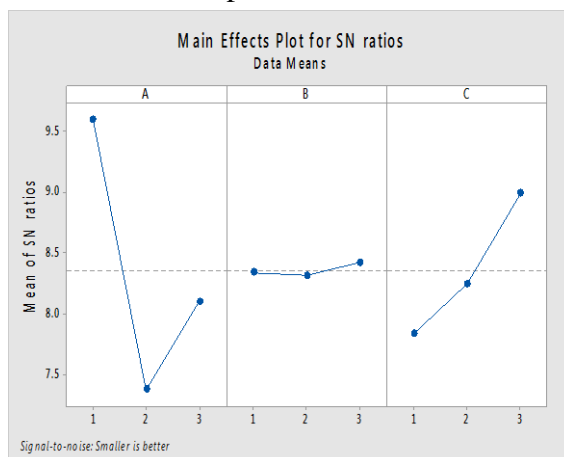


Figure 2 : Main effect plot for SN ratios

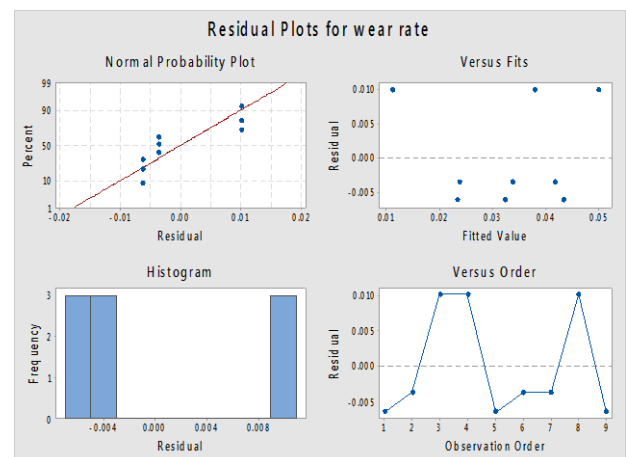


Figure 3 : Residual plot for wear rate

V. CONCLUSIONS

- Sliding distance (63.5%) has the highest influence on wear rate followed by sliding speed(34.00%) and applied load (1.25%) and for coefficient of friction, the contribution of applied load is(86.5%), sliding distance is (12.4%)and sliding speed is (0.6%) for Al+10% SiC+3% Gr+1Mg metal matrix composites.
- Sliding distance (6.0%) has the highest influence on wear rate followed by sliding speed(60.00%) and applied load (5.00%) and for coefficient of friction, the contribution of applied load is(87.5%), sliding distance is (9.2%)and sliding speed is (1.7%) for Al+15% SiC+3% Gr+1Mg metal matrix composites
- Applied load (58.05%) has the highest influence on wear rate followed by sliding distance (1.25%) and sliding speed (38.5%) and for coefficient of friction, the contribution of applied load is 87.5%, sliding distance is 9.2% and sliding speed 1.7% for Al+20% SiC+3% Gr+1Mg metal matrix composites.
- From the above conclusion we predict that sliding distance & applied load have the highest influence on wear rate in both composites.
- The significant parameters in the wear analysis were found from ANOVA. Applied load is the most significant factor followed by sliding distance and sliding speed in causing wear in case of the alloy. Similarly the contributions for composites are applied load, sliding speed and sliding distance. The interactions show negligible contribution for both alloy and composite specimen.

VI. FUTURE SCOPE

Thus from this dissertation the Investigation Tribological and Mechanical properties of Aluminum Based Silicon Carbide Metal Matrix Composite has been done only three varieties of percentage of Silicon Carbide i.e. 10%, 15% & 20% are discussed. There is scope to check the further more variations of percentage of silicon carbide.Also for this work conduct on room temperature There is scope to check the further more variations of temperature as per the application.After doing some modifications in existing specimen preparation processes, we can achieve better mechanical properties.There is scope for research on the same composites for other applications in automobile such as piston rings, cylinder blocks; cylinder liners etc.

VII. REFERENCES

- [1] "Graphite particles reinforced ZA-27 alloy composite material for journal bearing application", S. C. Shurma et.al, Wear, 20 Feb 1998,pp 162-168
- [2] "Dry sliding wear behavior of heat treated hybrid metal matrix composite using Taguchi techniques", T.S. Kiran, Materials & Design, 17 June 2014, pp 294-304
- [3] "Dry sliding wear behavior of hot extruded Al-Si-Pb alloys in the temperature range 25-2000c, J An, wear, 14 May 2004, pp375-385
- [4] "The wear of aluminum-based journal bearing material under lubrication", NehirSakiroglu, Material and design, 22 November 2009, pp 2532-2539.
- [5] "Effect of heat treatment on tribological behavior of zinc aluminium alloy reinforced with graphite SIC particles for journal bearing", T.S. Kiran, 14 Aug 2013, pp 292-300

- [6] “Tribological behavior of conventional Al-Sn and equivalent Al-Pb alloys under lubrication”, J P Pathak, 25 February 2003, pp 315-320
- [7] “Effect of Silicon carbide content on tribological properties of aluminium zinc alloy composite at elevated temperature”, S.B.Chikalthankar, 4 July 2015, pp 2995-3470.
- [8] “Effect of Silicon carbide content on tribological properties of aluminium zinc alloy composite at elevated temperature”, V M Nandedkar, 10 October 2014, pp 2278-0181
- [9] “Sliding temperature and wear behavior of cast Al-Si-Mgalloys”, Dheerendra Kumar, material and science engineering, 28 April 2004, pp 328-334

FOR CITATION

Shejul, S., Kharde, Y.R. (2016) :: “Experimental Investigation Of Sliding Wear And Tensile Behavior Of Al₂₇ Reinforced With Sipc And Graphite Hybrid Metal Matrix”
International Journal of Informative & Futuristic Research (ISSN: 2347-1697), Vol. 4
No. (4), December 2016, pp. 6046-6055, Paper ID: IJIFR/V4/E4/020.

A MULTIHOP ROUTING WITH ENERGY PRESERVATION FOR NETWORK STABILITY USING GENETIC ALGORITHM: A REVIEW

Paper ID

IJIFR/V4/ E4/ 063

Page No.

6056-6061

Subject Area

Elec. & Comm.
Engineering

Key Words

Wireless Sensor Network , LEACH , Energy Efficient Protocol , HEED, DEEC

1 st	Gurpreet Singh Grewal	M. Tech. Student , Department of Elec. & Comm. Engineering Baba Banda Singh Bahadur Engineering college Fatehgarh Sahib, Punjab (India)
2 nd	Mandeep Kaur	Professor Department of Elec. & Comm. Engineering Baba Banda Singh Bahadur Engineering college Fatehgarh Sahib, Punjab (India)

Abstract

Routing is one of the major issues in the wireless sensor network. It is defined as the process of finding the route for the data transmission. For routing process various energy efficient protocols have been designed. The efficiency of the system depends on the energy utilization of the node and the distance between the nodes. These energy efficient protocols are basically designed to find the efficient path between the source and the destination. As in wireless network the sensor nodes are battery powered device. o the amount of the energy consumed affects the life time of the network. So to minimize the energy consumption various protocols like LEACH, HEED, DEEC etc are used. The most commonly used energy efficient protocol is LEACH so this paper presents the detailed study of the LEACH protocol. Various advantage's and limitation s of the LEACH protocol is studied. Along with this various enhancement done in LEACH protocol are described.

I. INTRODUCTION

LEACH (Low Energy Adaptive Clustering Hierarchy) protocol that is in wireless sensor network. In this small battery powered device that are known as the sensor are used for the communication of the data. Once the power of these battery node drains these nodes cannot be used for the communication in the network. In wireless sensor network (WSN) large

numbers of sensor nodes are present. The nodes that are present in the network are used for the transmission of the data. The basic need of the network is to transmit the data reliably, accuracy and easily. The deployment of the nodes in the network needs to be done easily and accurately. The network that is to be designed should be done in the efficient manner so that the life time of the network is enhanced and the energy utilization should be minimized. The process of finding the data transmission route is termed as routing. In wireless sensor network large amount of nodes are present that are used for the sensing, transmitting, receiving of the data between the nodes present in the network. The efficiency of the network also depends on the selection of the path as it effects network life time, energy consumption etc. Various routing algorithms have been designed for the efficient routing process. The wireless sensor networks are reliable, accurate, cost effective and easily deployed. The life time of the network is defined by the energy consumed by the sensor nodes. So various routing mechanism have been developed that will help in increasing the life time of the network by consuming less amount of energy. The network efficiency depends on the energy consumed for transmitting the data by the nodes. The wireless sensor networks are used for the variety of applications. This is used for the analysis of the sensing data, for extraction of the features and for storing them and transmitting the data.

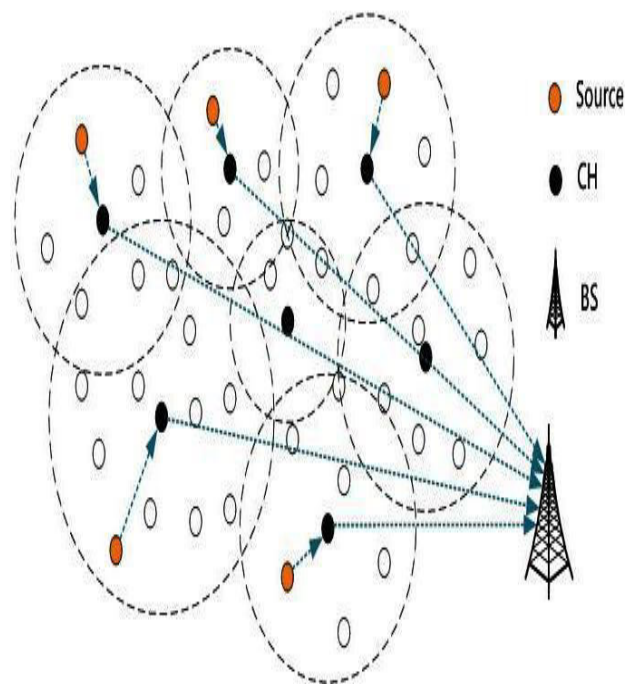


Figure1: Routing in wireless sensor network.

II. LITERATURE REVIEW

This section represents the literature survey on various energy efficient protocols proposed till date. Some of the paper based on the various energy efficient protocols has been discussed below: As for designing the wireless sensor network the energy utilization and the

life span of the network are two important factors that are taken in the consideration. For such purpose various routing protocols have been proposed for increasing network efficiency.

- **Rajesh Chaudhary** et al [1] present the review on various hierarchical based routing protocols. Wireless sensor network consist of various sensor nodes and one base station. The energy consumption of the nodes is the important factor that is taken in consideration while the network is designed. For an efficient system the energy utilization of the nodes should be less so that the life time of the network is increased .for minimizing the energy consumption various protocols are designed that will in turn increases the life time of the network . So in this paper author has created various sub type of network structure that are based on the routing protocol. The major issues of the wireless sensor network that is energy consumption of the nodes and life time of the network are taken in consideration.
- **Leena Y.Bara** et al [2] present the study of the LEACH. LEACH is the energy efficient protocol that will increase the life time of the network. The nodes preset in the network are used divided into the clusters, the cluster head is selected this cluster head will further communicate with the sink. When the cluster head node dies the communication will stop. Various performance parameters are considered that will depict the efficiency of the network. The parameters such as Packet Delivery Ratio, Throughput, Delay, and lifetime are considered. From the results obtained it is concluded that this protocol is efficient than the existing protocol of the wireless sensor network.
- **Lovepreet Kaur** et al [3] the paper presents an overview of various routing strategies used in the wireless sensor network. Routing is process of data transmission. The routing should be reliable as the data that is to be send should securely transmit. In this the model of energy efficient routing protocol in WSN is discussed. The comparison of different routing protocols is presented on the basis of various parameters. The parameters like stability, issues, latency etc have been considered.
- **Supriya Dhauta** et al [4] present a survey on various clustering technique. The main issue of the wireless sensor network is that the sensor nodes operate on the battery , that will affect the network life time as more energy is consumed by the nodes the life time of the network will decreased. Traditionally the homogeneous networks were considered in which the each node is assigned same amount of energy in order to increase the life time of the network, after that the heterogeneous network were considered in which different energy is provided to the nodes . This paper presents the survey of clustering algorithms of both Homogeneous and Heterogeneous wireless sensor network.
- **Harneet Kour** et al [5] present a new approach for the increasing the efficiency and lifetime of the network .Hybrid energy efficient distributed protocol (HEED) is proposed that is increases the lifetime of the network. Form the results obtained it is concluded that this protocol is more effective and than the other routing protocols. The energy of the network is increased that increase the life time of the network.
- **Sarbpreet Kaur** et al [6] present the study of the LEACH protocol. In WSN the nodes are operated with the help of the batteries that depends on eth energy efficiency. Energy

utilization of the node is the major challenge that is faced by the WSN network. For this various clustering techniques have been designed, with the help of such clustering algorithms the energy consumption is reduced that will results in the increase in the life time of the network. In this paper a review of various LEACH versions are discussed .A-LEACH, K-LEACH, O-LEACH and V-LEACH, EELBCRP are discussed and comparison is made to find the suitable protocol for reducing the consumption of the energy.

III. ENERGY EFFICIENT PROTOCOLS

1) LEACH: Low Energy Adaptive Clustering Hierarchy protocol (LEACH) is the basic protocol that is used increase the life time of the network.. It is basically a clustering technique in which the cluster head in network will directly communicate with the base station. The nodes present in the network will form the clusters and among the nodes present in the cluster head is selected. The nodes that are present in the cluster will communicate with the cluster head, and the cluster head will in turn communicate with the base station. In this the cluster head gathers the data from the nodes and transmit the data to the base station. So the energy of the cluster head is more than the other nodes of the cluster thus forming a heterogeneous network.

$$T(n) = \begin{cases} \frac{p}{1 - p \times (r \bmod \frac{1}{p})} & \text{if } n \in G \\ 0 & \text{otherwise} \end{cases}$$

P is the percentage of the cluster head, r is the rounds, G is the set of nodes that are not the cluster head in the $\frac{1}{p}$ rounds.

- **Advantage of the LEACH**

- I. It doesn't require any control information from the base station. This protocol is completely distributed.
- II. The energy that is required for the communication is reduced by using LEACH protocol.

2) PEGASIS (Power efficient gathering in sensor information systems): The problem of data gathering is solved by using this protocol for energy efficiency in wireless sensor networks. The distance factor is considered for transmitting data to the base station. The nearest node sends data from the node to the cluster head and then it forwards that data to the sink or the base station. Another feature of this protocol is that the load is evenly distributed among nodes that mean all the deployed nodes in a network will have equal load. The deployed nodes are placed randomly in the network and these nodes form chain while communicating. The computation of the network chain is done by the base station and then is done data distribution in the network.

3) HEED (HYBRID ENERGY EFFICIENT DISTRIBUTED PROTOCOL): HEED protocol is designed to improve the energy efficiency and the lifetime of the network. The cluster head selection in this protocol is done on the basis of the residual energy of the

nodes. If the nodes have similar residual energy then distance is taken into consideration for selecting cluster head. But one limitation of this protocol is that it the network should be homogeneous i.e. all nodes should have same energy value. The protocol is designed for fulfilling three main objectives that are increasing lifetime of the network, fixing the numbers of rounds for clustering, formation of well distributed clusters in a network and minimizing control in a network.

IV. CONCLUSION AND FUTURE SCOPE

In wireless sensor network the design of Routing protocol is one of the main challenges. The energy utilization and the life time of the network are two major factors on which the efficiency of eth network depends. The energy consumption of the nodes for the transmission of the data should be less. This will also affects the life time of the network. As the less amount of energy is consumed for the data transmission, more amounts of data is send and the life time of the network will increases . For this various protocols have been designed. This paper presents the study of the LEACH protocol. Form the literature study it is concluded that this protocol is efficient than the traditional protocols.

The energy consumption of the node is minimized and thus the life time of network is increased. Though these protocols are efficient still some limitation are there. In future further wok can be done in enhancing the life time of the network and decreasing the energy consumption o the nodes. Along with this the modification can be done LEACH protocol and soft computing techniques can be also used for obtaining the best results.

V. REFERENCES

- [1] Rajesh Chaudhary, “Review Paper on Energy- Efficient Protocols in Wireless Sensor Networks “ IOSR Journal of Engineering , Vol. 04, Issue 02 , February. 2014, Vol 4,Pp 01-07
- [2] Leena Y.Bara , “Performance Evaluation of LEACH Protocol for Wireless Sensor Network “ International Journal of Innovative Research in Advanced Engineering (IJRAE) ,Volume 1 Issue 6 ,2014, Pp 141-145
- [3] Lovepreet Kaur(2014), “Energy-Efficient Routing Protocols in Wireless Sensor Networks: A Survey “International Journal of Computer Applications ,Volume 100– No.1,Pp 25-29
- [4] Supriya Dhauta, “Review on LEACH-Homogeneous and Heterogeneous Wireless Sensor Network” International Journal of Innovative Research in Computer and Communication Engineering ,Vol. 3, Issue 5, May 2015, Pp 4442-4447
- [5] Harneet Kour, “Hybrid Energy Efficient Distributed Protocol for Heterogeneous Wireless Sensor Network” International Journal of Computer Applications, Volume 4 , No. 6, July 2010,Pp 1-5
- [6] Sarbpreet Kaur, “Review Study of Leach Protocol Value” ,International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 3 Issue VI, June 2015,Pp 948-952
- [7] Monica R Mundada (2012), “A study on energy efficient routing protocols in wireless sensor networks “international journal of distributed and parallel systems (IJDPS) Vol.3, No.3,Pp 311-330
- [8] S.Koteswararao, “Implementation of Multi hop Cluster based Routing Protocol for Wireless Sensor Networks” International Journal of Computer Applications, Volume 59, No.8 , December 2012, Pp 1-5

- [9] Shamsad Parvin (2008), "Routing Protocols for Wireless Sensor Networks: A Comparative Study , International Conference on Electronics, Computer and Communication (ICECC) Pp 891-894
- [10] Neha Rathi(2012)," A review on routing protocols for application in wireless sensor networks "International Journal of Distributed and Parallel Systems (IJDPS) Vol.3, No.5,Pp 39-58
- [11] Qian Liao ,” An Energy Balanced Clustering Algorithm Based on LEACH Protocol” Proceedings of the 2nd International Conference On Systems Engineering and Modeling ,2013
- [12] Himanshi "Study of Wireless Sensor Network Using LEACH Protocol" International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-3, Issue-2, July 2013,Pp 5-8
- [13] Pateel H S, "A Survey on Energy Balanced Clustering and Routing Protocol for Wireless Sensor Network ", ional Journal of Advanced Research in Computer Science and Software Engineering, Volume 5, Issue 2, February 2015,Pp 525-528
- [14] Alami Chaibrassou , "MGI-LEACH: Multi Group LEACH Improved an Efficient Routing Algorithm for Wireless Sensor Networks "journal of emerging technologies in web intelligence, Vol. 6, no. 1, february 2014,pp 40-44
- [15] P. Kaur "The Energy-Efficient Hierarchical Routing Protocols for WSN: A Review " in International Journal of Advanced Research in Computer Science and Software Engineering ,2012.
- [16] W. R. Heinzelman,,"Energy efficient communication protocol for wireless micro sensor networks" Proceedings of the Hawaii International Conference on System Sciences. 2000
- [17] A.Jorio, S. El fkihi, B. El Bhiri, D. Aboutajdine" A new clustering algorithm for wireless sensor networks",Journal of Theoretical and Applied Information Technology ,2013
- [18] Sonam Palden Barfunga and Prativa Rai, "Energy Efficient Cluster Based Routing Protocol for Wireless Sensor Networks," International Conference on Computer and Communication Engineering, 2012, pp. 603-607,
- [19] Pratyay Kuila and Prasanta K. Jana, "An Energy Balanced Distributed Clustering and Routing Algorithm for Wireless Sensor Networks," IEEE International Conference on Parallel, Distributed and Grid Computing, ,2012 ,pp. 220-225.,
- [20] Ye Ming Lu and Vincent W. S. Wong, "An energyefficient multipath routing protocol for wireless sensor networks", International Journal of Communication Systems, Special Issue: Energy-Efficient Network Protocols and Algorithms for Wireless Sensor Networks, Vol. 20, No. 7, , 2007. pp. 747-766
- [21] Wendi Rabiner Heinzelman, Anantha Chandrakasan and Hari Balakrishnan, "Energy-Efficient Communication Protocol for Wireless Micro sensor Networks", Proceedings of the 33rd Hawaii International Conference on System Sciences, 2000.
- [22] Mortaza Fahimi Khaton Abad and Mohammad Ali Jabraeil Jamali, "Modify LEACH Algorithm for Wireless Sensor Network", International Journal of Computer Science Issues, Vol. 8, No. 5, , 2011. pp. 219-224
- [23] D. Mahmood, N. Javaid, S. Mahmood, S. Qureshi and A. M. Memon and T. Zaman, "MODLEACH: A Variant of LEACH for WSNs", Proceedings of Eighth International Conference on Broadband and Wireless Computing, Communication and Applications, 3, 2013.pp. 158-16

FOR CITATION

Singh, G. , Kaur, M. (2016) :: "A Multihop Routing With Energy Preservation For Network Stability Using Genetic Algorithm: A Review" *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. 4 No. (4), December 2016, pp. 6056-6061, Paper ID: IJIFR/V4/E4/063.